

Digital Media and Society

Nancy K. Baym *Personal Connections in the Digital Age*
Jean Burgess and Joshua Green *Youtube*
Mark Deuze *Media Work*
Charles Ess *Digital Media Ethics*
Alexander Halavais *Search Engine Society*
Robert Hassan *The Information Society*
Tim Jordan *Hacking*
Leah Lievrouw *Alternative and Activist New Media*
Rich Ling and Jonathan Donner *Mobile Communication*
Zizi Papacharissi *Digital Politics*
Donald Matheson and Stuart Allan *Digital War Reporting*
Jill Walker Rettberg *Blogging*
Patrik Wikström *The Music Industry*

Personal Connections in the Digital Age

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New forms of personal connection

There have never been more ways to communicate with one another than there are right now. Once limited to face to face conversation, over the last several millennia we have steadily developed new technologies for interaction. The digital age is distinguished by rapid transformations in the kinds of technological mediation through which we encounter one another. Face to face conversation, land-line telephone calls, and postal mail have been joined by email, mobile phone calls, text messaging, instant messaging, chat, web boards, social networks, photo sharing, video sharing, multiplayer gaming, and more. People have always responded to new media with confusion. In this time of rapid innovation and diffusion, it's natural to be concerned about their effects on our relationships.

When first faced with a new barrage of interpersonal communication media, people tend to react in one of two ways, both of which have long cultural histories. On the one hand, people express concern that our communication has become increasingly shallow. For many, the increased amount of mediated interaction seems to threaten the sanctity of our personal relationships. For others, new media offer the promise of more opportunity for connection with more people, a route to new opportunities and to stronger relationships and more diverse connections. Both perspectives reflect a sense that digital media are changing the nature of our social connections. Over time, as people get used to new communication media, we come to see them in more nuanced ways. Eventually they become so taken for granted they are all but invisible. These moments in which they are new and the norms for their use are in flux offer fresh opportunities to think about our technologies, our connections, and the relationships amongst them.

The purpose of this book is to provide a means of thinking critically about the roles of digital media, in particular the internet and the mobile phone, in personal relationships. Rather than providing exuberant accounts or cautionary tales, this book provides a theoretical and data-grounded primer on how to make sense of these important changes in relational life. I began paying attention to these issues in 1990, launched my first research project into interpersonal communication over the internet in 1991, and began teaching courses in communication and new technology in Communication departments in 1994. The material in this book draws on my research projects, observations, and the large and growing body of scholarship on how digital media affect our interpersonal lives to offer frameworks for evaluating and understanding these changes.

New media, new boundaries

Digital media raise a variety of issues as we try to understand them, their place in our lives, and their consequences for our personhood and relationships with others. When they are new, technologies affect how we see the world, our communities, our relationships, and our selves. They lead to social and cultural reorganization and reflection. In her landmark study of nineteenth-century popular scientific magazines, Carolyn Marvin (1988) showed how a new technology such as electricity, the telegraph, or the telephone creates a point in history where the familiar becomes unfamiliar, and therefore open to change. This leads to anxiety. While people in ancient times fretted about writing and Victorians fretted about electricity, today we are in "a state of anxiety not only about the PC, but in relation to technology more generally" (D. Thomas, 2004: 219).

The fundamental purpose of communication technologies from their ancient inception has been to allow people to exchange messages without being physically co-present. Until the invention of the telegraph in the 1800s, this ability to transcend space brought with it inevitable time delays. Messages could take years to reach their audience. The telegraph changed that by allowing real-time

communication across long distances for the first time. People may have reeled in the face of writing and publishing, but it was little compared to how we reeled and continued to reel in the face of this newfound power to collapse time and space. After millennia as creatures who engage in social interaction face to face, the ability to communicate across distance at very high speeds disrupts social understandings that are burned deep into our collective consciousness. Digital media continue these disruptions and pose new ones. They raise important questions for scholars and lay people alike. How can we be present yet also absent? What is a self if it's not in a body? How can we have so much control yet lose so much freedom? What does personal communication mean when it's transmitted through a mass medium? What's a mass medium if it's used for personal communication? What do private and public mean anymore? What does it even mean to *be* real?

Kenneth Gergen (2002) describes us as struggling with the "challenge of absent presence," worrying that too often we inhabit a "floating world" in which we engage primarily with non-present partners despite the presence of flesh-and-blood people in our physical location. We may be physically present in one space, yet mentally and emotionally engaged elsewhere. Consider, for instance, the dinner partner who is immersed in his mobile phone conversation. Since he is physically present, yet simultaneously absent, the very nature of self becomes problematic. Where is "he?" The borders between human and machine, the collapse of which was celebrated in Haraway's (1990) "Cyborg manifesto," and between self and body, are thrown into flux. In a time when some people feel that their "real self" is expressed best online (McKenna, Green, & Gleason, 2002), long-distance romances are built and maintained through electronic contact, and spaces for our media are built right into the clothing we wear, how do we know where, exactly, true selves reside? Furthermore, what if the selves enacted through digital media don't line up with those we present face to face, or if they contradict one another? If someone is nurturing face to face, aggressive in one online forum, and needy in another online forum, which is real? Is there such a thing as a true self anymore? Was there ever?

The separation of presence from communication offers us more control over our social worlds yet simultaneously subjects us to new forms of control, surveillance, and constraint. Naomi Baron (2008) argues that new media offer us "volume control" to regulate our social environment and manage our encounters. We can create new opportunities to converse. We can avoid interactions, talking into a mobile phone (or pretending to) to avoid a co-present acquaintance or letting calls go to voice mail. We can manipulate our interactions, doing things like forwarding nasty emails or putting people on speakerphone. We can use nonverbally limited media such as text messages or emails to shelter us from anxiety-inducing encounters such as flirting or ending relationships. But, just as we can use these media to manage others more strategically, others can also more easily manage us. Our autonomy is increasingly constrained by the expectation that we can be reached for communication anytime, anywhere, and we will owe an appropriate and timely response. We are trapped by the same state of "perpetual contact" (Katz & Aakhus, 2002) that empowers us.

One of the most exciting elements of new media is that they allow us to communicate personally within what used to be prohibitively large groups. This blurs the boundary between mass and interpersonal communication in ways that disrupt both. When people gather in an online space to talk about a television show, they are a mass communication audience, but the communication they have with one another is both interpersonal, directed to individuals within the group, and mass, available for anyone to read. If, as increasingly happens, the conversations and materials these fans produce for one another are incorporated into the television show, the boundaries between the production and reception of mass media are blurred as well. Furthermore, what is personal may become mass, as when a young woman creates a videolog for her friends, which becomes widely viewed on YouTube. The ability for individuals to communicate and produce mediated content on a mass scale has led to opportunities for fame that were not available outside of the established culture industries before, but confusion about the availability and scale of messages has also led to unplanned broadcast of what was meant to be private.

This is just one way in which the boundaries between public and private are implicated in and changed by digital media. Internet users, especially youth, have been decried for revealing private information through online activities. Mobile phone users have been assailed for carrying on private conversations in public spaces (and shooting nasty looks at those who don't pretend not to notice). Puro (2002: 23) describes mobile phone users as "doubly privatizing" public space since they "sequester themselves non-verbally and then fill the air with private matters." Homes, especially in affluent societies, exhibit a "privatized media rich bedroom culture" (Livingstone, 2005) in which people use media to create privacy and solitude. All of this happens in a cultural moment when individualism is increasingly defined through consumerist practices of purchasing mass mediated and branded products (Gergen, 1991; Livingstone, 2005; Walker, 2008).

At the heart of this boundary flux is deep confusion about what is virtual – that which seems real but is ultimately a mere simulation – and what is real. Even people who hang out and build relationships online contrast it to what they do "IRL" (In Real Life), lending credence to the perception that the mediated is unreal. Digital media thus call into question the very authenticity of our identities, relationships, and practices (e.g. Sturken & Thomas, 2004). Some critics have noted that these disruptions are part and parcel of a movement from modern to postmodern times in which time and space are compressed, speed is accelerated, people are ever more mobile, communication is person-to-person rather than place-to-place, identities are multiple, and communication media are ubiquitous (e.g. Fornäs, Klein, Ladendorf, Sundén, & Sveningsson, 2002; Haythornthwaite & Wellman, 2002; Ling, 2004). Others have emphasized how, within these cultural changes, digital media are made mundane, boring, and routine as they are increasingly embedded in everyday lives and social norms coalesce around their use (e.g. Haythornthwaite & Wellman, 2002; Humphreys, 2005; Ling, 2004). The first perspective forms a necessary backdrop for contextualizing and making sense of the second, but the emphasis in this book is on the mundane and the everyday, on how people incorporate digital media into their routine practices of relating and with what consequences.

Plan of the book

In the remainder of this chapter I identify a set of key concepts that can be used to differentiate digital media and which influence how people use them and with what effects. I then offer a very brief overview of the media discussed in this book and a discussion of who does and who doesn't make use of them. Chapter 2 is an orientation to the major perspectives used to understand the interrelationships between communication technology and society and an exploration of the major themes in popular rhetorics about digital media and personal connection. Chapter 3 examines what happens to messages, both verbal and nonverbal, in mediated contexts. Chapter 4 addresses the group contexts in which online interaction often happens, including communities and social networks. The remaining two chapters explore dyadic relationships. Chapter 5 shows how people present themselves to others and first get to know each other online. Chapter 6 looks at how people use new media to build and maintain their relationships. Finally, the conclusion returns to the question of sorting myths from reality, arguing against the notion of a "cyberspace" that can be understood apart from the mundane realities of everyday life and for the notion that what happens online may be newer, but is no less real.

Seven key concepts

If we want to build a rich understanding of how media influence personal connections, we need to stop talking about media in overly simplistic terms. We can't talk about consequences if we can't articulate capabilities. What is it about these media that changes interaction and, potentially, relationships? We need conceptual tools to differentiate media from one another and from face to face (or, as Fortunati, 2005, more aptly termed it, "body to body") communication. We also need concepts to help us recognize the diversity amongst what may seem to be just one technology. The mobile phone, for instance, is used for voice, texting, and also picture and video exchange. The internet includes interaction platforms as diverse as YouTube, product reviews on

shopping sites, email and Instant Messaging (IM), which differ from one another in many ways. Seven concepts that can be used to productively compare different media to one another as well as to face to face communication are interactivity, temporal structure, social cues, storage, replicability, reach, and mobility.

The many modes of communication on the internet and mobile phone vary in the degrees and kinds of *interactivity* they offer. Consider, for instance, the difference between using your phone to select a new ringtone and using that phone to argue with a romantic partner, or using a web site to buy new shoes rather than to discuss current events. Fornás and his co-authors (2002: 23) distinguish several meanings of interactivity. Social interactivity, "the ability of a medium to enable social interaction between groups or individuals," is what we are most interested in here. Other kinds include technical interactivity, "a medium's capability of letting human users manipulate the machine via its interface," and textual interactivity, "the creative and interpretive interaction between users (readers, viewers, listeners) and texts." "Unlike television," writes Laura Gurak (2001: 44), "online communication technologies allow you to talk back. You can talk back to the big company or you can talk back to individual citizens." Rafaeli and Sudweeks (1997) posit that we should see interactivity as a continuum enacted by people using technology, rather than a technological condition. As we will see in chapters to come, the fact that the internet enables interactivity gives rise to new possibilities – for instance, we can meet new people and remain close to those who have moved away – as well as old concerns that people may be flirting with danger.

The *temporal structure* of a communication medium is also important. Synchronous communication, such as is found in face to face conversations, phone calls, and instant messages, occurs in real time. Asynchronous communication media, such as email and voicemail, have time delays between messages. In practice, the distinction cannot always be tied to specific media. Poor connections may lead to time delays in a seemingly synchronous online medium such as Instant Messaging. Text messaging via the telephone is often asynchronous, but needn't be. Ostensibly

asynchronous email may be sent and received so rapidly that it functions as a synchronous mode of communication.

The beauty of synchronous media is that they allow for the very rapid transmission of messages, even across distance. As we will see, synchronicity can enhance the sense of placelessness that digital media can encourage and make people feel more together when they are apart (Baron, 1998; Carnevale & Probst, 1997; McKenna & Bargh, 1998). Synchronicity can make messages feel more immediate and personal (O'Sullivan, Hunt, & Lippert, 2004) and encourage playfulness in interaction (Danet, 2001). The price of synchronicity, however, is that interactants must be able to align their schedules in order to be simultaneously engaged. Real-time media are also poorly suited to hosting interaction in large groups, as the rapid-fire succession of messages that comes from having many people involved is nearly impossible to sort through and comprehend, let alone answer. There is a reason that dinner parties are generally kept to a small collection of people and at large functions guests are usually seated at tables that seat fewer than a dozen. Accordingly, most online chat rooms and other real-time forums have limits on how many can participate at one time.

With asynchronous media, the costs and benefits are reversed. Asynchronous communication allows very large groups to sustain interaction, as seen in the social network sites and online groups like fan forums, support groups, and hobbyist communities addressed in chapter 4. Asynchronicity also gives people time to manage their self-presentations more strategically. However, word may filter more slowly through such groups and amongst individuals. We can place fewer demands on others' time by leaving asynchronous messages for people to reply to when they like, but we may end up waiting longer than we'd hoped, or receive no reply at all. One of the biggest changes wrought by digital media is that even asynchronous communication can happen faster than before. Time lags are created by the time it takes a person to check for new messages and respond, not by the time messages spend in transit. In comparison to postal mail, the internet can shave weeks off interactions.

Most of the questions surrounding the personal connections

people form and maintain through digital media derive from the sparse *social cues* that are available to provide further information regarding context, the meanings of messages, and the identities of the people interacting. As chapter 3 will address in more detail, rich media provide a full range of cues, while leaner media provide fewer. Body-to-body, people have a full range of communicative resources available to them. They share a physical context, which they can refer to nonverbally as well as verbally (for instance, by pointing to a chair). They are subject to the same environmental influences and distractions. They can see one another's body movements, including the facial expressions through which so much meaning is conveyed. They can use each other's eye gaze to gauge attention. They can see one another's appearance. They can also hear the sound of one another's voice. All of these cues – contextual, visual, and auditory – are important to interpreting messages and creating a social context within which messages are meaningful.

To varying degrees, digital media provide fewer social cues. In mobile and online interactions, we may have few if any cues to our partner's location. This is no doubt why so many mobile phone calls begin with the question "where are you?" and also helps to explain some people's desire to share GPS positioning via mobile applications. The lack of shared physical context does not mean that interactants have no shared contexts. People communicating in personal relationships share relational contexts, knowledge, and some history. People in online groups often develop rich in-group social environments that those who've participated for any length of time will recognize.

Though, as we will address in more depth in chapter 6, much of our mediated interaction is with people we know face to face, some media convey very little information about the identities of those with whom we are communicating. In some circumstances, this renders people anonymous, leading to both opportunity and terror. In lean media, people have more ability to expand, manipulate, multiply, and distort the identities they present to others. The paucity of personal and social identity cues can also make people feel safer, and thus create an environment in which they are more honest. Chapter 5 examines these identity issues.

Media also differ in the extent to which their messages endure. *Storage*, and, relatedly, *replicability*, are highly consequential. Unless one makes an audio or video recording of telephone and face to face conversations (practices with laws governing acceptable practice), they are gone as soon as they are said. Human memory for conversation is notoriously poor. To varying degrees, digital media may be stored on devices, web sites, and company backups where they may be replicated, retrieved at later dates, and edited prior to sending (Carnevale & Probst, 1997; Cherny, 1999; Culnan & Markus, 1987; Walther, 1996). Synchronous forms like IM and Skype require logging programs that most users are not likely to have. Those that are asynchronous can be easily saved, replicated and redistributed to others. They can also be archived for search. Despite this, online messages may feel ephemeral, and indeed web sites may be there one day and different or gone the next.

Media also vary in the size of an audience they can attain or support, or *reach*. Gurak (2001: 30) describes reach as "the partner of speed," noting that "digitized discourse travels quickly, but it also travels widely . . . One single keystroke can send a message to thousands of people." Face to face communication is inherently limited to those who can fit in the same space. Even when amplified (a form of mediation in itself), physical space and human sensory constraints limit how many can see or hear a message as it's delivered. The telephone allows for group calls, but the upper limit on how many a group can admit or maintain is small. In contrast, many forms of digital communication can be seen by any internet user (as in the case of websites) or can be sent and, thanks to storage and replicability, resent to enormous audiences. Messages can reach audiences both local and global. This is a powerful subversion of the elitism of mass media, within which a very small number of broadcasters could engage in one-to-many communication, usually within regional or geographic boundaries. The gatekeeping function of mass media is challenged as individuals use digital media to spread messages much farther and more widely than was ever historically possible (Gurak, 2001). Future chapters will address how enhanced reach allows people to form new communities of interest and new relationships.

Finally, media vary in their *mobility*, or extent to which they are portable – enabling people to send and receive messages regardless of location – or stationary – requiring that people be in specific locations in order to interact. The mobile phone represents the paradigm case of mobility, making person-to-person communication possible regardless of location. The clunky personal computer tied to a desk requires that the user be seated in that spot. Landline phones require that people be in the building where that number rings. In addition to offering spatial mobility, some digital media allow us to move between times and interpersonal contexts (Ishii, 2006). Mobile media offer the promise that we need never be out of touch with our loved ones, no matter how long the traffic jam in which we find ourselves. When stuck with our families, we may import our friends through our mobile devices. As we'll see in chapter 6, mobile media give rise to microcoordination (Ling, 2004) in which people check in with one another to provide brief updates or quickly arrange meetings and errands. However, more than other personal media, mobile phones threaten autonomy, as we may become accountable to others at all times. Schegloff (2002), one of the first to study telephone-mediated interaction, suggests mobile media don't create perpetual contact so much as offer the perpetual possibility of making contact, a distinction some exploit by strategically limiting their availability (Licoppe & Heurttin, 2002).

These seven concepts help us begin to understand the similarities and differences between face to face communication and mediated interaction, as well as the variation amongst different kinds of digital interactions. Face to face communication, like all the forms of digital media we will be discussing, is interactive. People can respond to one another in message exchanges. Face to face communication is synchronous. It is also loaded with social cues that make one another's identities and many elements of social and physical context apparent (although, as we will return to in chapter 5, this does not guarantee honesty). Face to face conversations cannot be stored, nor can they be replicated. Even when recorded and, for example, broadcast, the recording loses many elements of the context that make face to face communication

what it is. As discussed above, face to face communication has low reach, limiting how many can be involved and how far messages can spread. Face to face communication may be mobile, but only so long as the interactants are moving through space together. This combination of qualities grants face to face a sort of specialness. The full range of cues, the irreplicability, and the need to be there in shared place and time with the other all contribute to the sense that face to face communication is authentic, putting the "communion" in communication.

In contrast, some forms of mediated interaction are asynchronous, enabling more message planning and wider reach, but a potentially lower sense of connection. Media such as Skype or other video chat technologies offer many social cues – voice, facial expression, a window into the physical surroundings – but lack critical intimacy cues including touch and smell. Most digital media have fewer social cues than that, limiting interaction to sounds or even just words. By virtue of their conversion into electronic signals, all digital media can be stored, though particular interactions may not be. Even when conversations and messages are not stored, however, they may leave traces such as records of which phone numbers called which other ones, which IP addresses visited which websites, or how many tweets a person has tweeted. Digital messages are easily replicated if they are asynchronous, but less so if they are synchronous. The reach of digital media can vary tremendously depending on the medium. A phone call generally remains a one-to-one encounter as does much instant messaging and chat, but emails, mailing lists, discussion groups, and websites are among the digital modes that can have extraordinary reach. Digital media are becoming increasingly mobile as the internet and mobile phone converge into single devices, meaning that these technologies make communication possible in places where it wasn't before, but also that they can intrude into face to face conversations where they never could before. As a result, people can have very different experiences with different media, yet none may seem to offer the potential for intimacy and connection that being face to face does. These distinctions all bring with them important potential social shifts, which the remainder of this book will address.

Digital media

Just as it's important to clarify core concepts that may shape mediated social interaction, it's helpful to walk through the media in question. I assume readers are familiar with the mobile phone, so I focus below on a brief historical overview of the internet. I emphasize the extent to which the interpersonal appeal of these media shaped their development. Unlike the mobile phone, the internet was not built as a personal communication medium, let alone a way for fans to connect around their objects of pleasure, for people to find potential romantic partners, for employers to find or investigate potential hires, or any such social processes. It was developed to safeguard military knowledge. When the first internet connection was made in 1969 through what was then called ARPANET, funded by the US Department of Defense, no one envisioned that an interpersonal communication medium had been launched. It is beyond the scope of this book to cover the technological development of the internet; the reader is referred to Janet Abbate's (1999) history. First, though, a disclaimer: trying to list specific types of digital media is frustrating at best. Between this writing and your reading there are bound to be new developments, and things as popular as I write will drop from vogue. Let this be a reminder to us of the importance of remaining focused on specific capabilities and consequences rather than the media themselves.

The textual internet

For its first quarter-century, the internet was text-only. With its limited social cues, it seemed a poor match for personal interaction. Yet it took mere months for its developers (who were also its primary users) to realize the medium's utility for personal communication. Within three years of the first login, email was in use, and within four years, three-quarters of online traffic was email (Anderson, 2005). By 2000, the ability to use email was a significant reason that people first got online and one of the main reasons that those already online stayed online (Kraut, Mukhopadhyay, Szczypula, Kiesler, & Scherlis, 2000).

Synchronous person-to-person and small-group communication also developed early in the internet's history. "Talk" was an early synchronous internet communication genre. When using Talk, a horizontal line divided the top and lower halves of the screen, each half showing messages from one interactant. It was as minimalist and purely textual as a communication medium could be. Talk remained in regular usage into the early 1990s. When I began using the internet in 1990, I used it almost daily to tell my then-boyfriend that dinner was ready – I couldn't call since his phone line was tied up with his modem's internet connection. Talk provided a convenient work-around. Talk was followed by Internet Relay Chat (IRC) and, later, chat rooms that allowed distributed groups to converse in real-time. Instant Messaging, developed in the 1990s, can be seen as an advanced version of Talk. A person-to-person medium, IM is distinctive in its use of a buddy list and provision of continual information about who on that list is online and available for contact.

Not long after email, mailing lists were developed, in which a single email could be sent to a large group of subscribers, all of whom would receive it and (usually) be able to respond. Although the technological specifications of email and mailing lists are the same, there are some important differences. Specifically, on mailing lists, senders may very well not know most (or any) of the recipients. Mailing lists are often large. For instance, the Association of Internet Researchers' mailing list, AIR-L, has approximately 2,000 subscribers in many nations. In contrast, others are small private lists of family and friends. A colleague of mine, faced with a family member's cancer, created a mailing list of family members so that they could all share news with a single message. Private mailing lists may also be made up of school friends who have graduated or other such small groups of people seeking to stay in touch as a group.

In the early 1980s, another means of asynchronous group discussion with wide reach developed. Usenet newsgroups are asynchronous topic-based discussion forums distributed across multiple servers. Although these groups have become magnets for spam, they continue to house a great deal of online discussion. Originally, one read newsgroups through newsgroups built into

Unix operating systems. This later developed into stand-alone newsgroups. Now most people access Usenet through the web, most notably through Google groups, where they may well not recognize them as Usenet newsgroups. These provided an early model for the topical web boards so common now. They were also my own entrée into online group communication and the subject of my earliest work on computer mediated communication.

In some early sites, developers and participants used words and code to create a rich geographical context for synchronous interactions and a highly developed range of characters. In the late 1970s, Richard Bartle and Roy Trubshaw developed MUD1, an interactive online role-playing game. Around the same time, Alan Kietz independently developed Sceptre of Goth, a MUD game (Bartle, 2004). Readers who play World of Warcraft or related massively multiplayer online role-playing games will recognize MUDs as their precedent. MUD stands for either Multi-User Domain or the less antiseptic Multi-User Dungeon, which better captures the phenomenon's origin in the role-playing game Dungeons and Dragons. Many MUDs offered predetermined categories by which to define one's character. People might choose their sex (often from a list with more than two choices) and race. Depending on the MUD, people might choose to be elves, fairies, cats, dragons, trolls, vampires, and other fantasy creatures.

Lambda MOO (Multi-User Domain Object-Oriented, a distinction that is of minimal importance here) and many other MUDs, MOOs, MUCKs, MUSHes, and other oddly acronymed parallel sites followed, many of which were simply creative environments in which fictional rooms and landscapes served as spaces for social interaction, not games. Though MUDs and MOOs have always been obscure uses of the internet (unlike the later graphical games they inspired), they were the object of an inordinate amount of early research about the internet.

The World Wide Web

A major transformation in digital communication occurred in the 1990s when a group of physicists led by Sir Tim Berners-Lee at the

Swiss physics laboratory CERN developed the World Wide Web. This heralded a shift from communication that was purely text-based to multimedia communication, and gave rise to more new forms of mediated interaction than I can cover here. These include web boards, blogs, wikis, social network sites, video and photo sharing sites, and graphically intensive virtual worlds.

In the 1990s, web boards took up where the promise of Usenet left off, facilitating asynchronous topic-based group interaction amongst people who did not need prior connections. Blogs, authored by either single people or collectives, are websites in which recent updates appear above previous updates, creating a reverse chronology of messages. Their content may be personal, political, or anything else, and their audiences may be anything from zero to millions. By convention and design, blogs almost always include a list of hyperlinks to other blogs (a "blog roll"), which serves to create connections and drive traffic amongst blogs. Groups of bloggers may read one another and comment on each others' blogs, creating communities of like-minded individuals and semi-organized grassroots social movements.

Also during this time, websites such as Active Worlds began to develop graphically rich environments. These have exploded in the early 2000s, in the form of massively multiplayer online role-playing games (MMORPGs – an acronym usually pronounced "more pigs") such as World of Warcraft, Everquest, and Lineage, and non-game spaces such as Second Life.

The 2000s brought with them what has been called "Web 2.0." The hallmark of Web 2.0 is often taken to be user-generated content, but, having been through the paragraphs just above, one must wonder what content on the textual internet and much of Web 1.0 was not generated by users. Wikis, the most famous of which is Wikipedia, are among the stars of this generation of digital media. Wikis are collective encyclopedia-authoring sites in which people can collaborate to produce informative entries. Though this may sound sterile, behind the editing of entries are rich social worlds of interconnected users with shared histories, conventions, and practices. Social network sites (SNSs) such as Facebook, MySpace, LiveJournal and Bebo, in which individuals have profiles

to which they can upload many diverse media (photos, videos, music, links, and more) and connect their profiles with others through "friending", have been wildly successful in the 2000s and are near-ubiquitous, especially amongst young people, in some countries. Boyd and Ellison (2007) locate the origins of SNSs in the advent of SixDegrees.com in 1997, followed by AsianAvenue, BlackPlanet and MiGente, then LiveJournal and Cyworld (1999) and LunarStorm (2000). MySpace began in 2003, and Facebook in 2005. Video and photo sharing sites such as YouTube (owned by Google) and Flickr (owned by Yahoo!) may be considered a subset of SNSs. In these sites, people can create personal accounts, upload their own materials, and share them with others publicly or only amongst approved recipients. Social network sites are unique in combining multiple modes of communication and, hence, in the breadth of and control over social cues they may provide.

As this brief review suggests, even as we are concerned with their overall impact, we must avoid the temptation to look at new media only as a whole. Each of these media, as well as the mobile phone, offers unique affordances, or packages of potentials and constraints, for communication. To understand how we use them, and with what consequences, we need to consider them both separately and holistically.

Who uses new digital media?

The story of online media history is also a story of changing users, and we need to keep questions of whom we are talking about in mind as we think about how new media and social life intertwine. In its early years, the only people using the internet were the ones developing it, almost all of whom were located in the United States and the UK (Abbate, 1999). By the 1980s, scientists at universities had begun to use it, and, by the end of that decade, college students were using it too. But the internet of the 1980s was funded almost entirely by the National Science Foundation (NSF), an agency of the United States government. Commercial activity was prohibited, and almost all users gained access through a university affiliation, or a government lab or agency. Computer networks connecting

people with home computers, such as Compuserve, Prodigy, and America Online, began in the 1980s, as did many private electronic bulletin boards (indeed, these had existed since the 1970s). These provided home hobbyists with a means to get online, but they were not integrated with each other or with the internet.

Throughout the 1980s and the early 1990s, access to the internet gradually spread to other countries. It was not until the mid-1990s that the diffusion of the internet into everyday life for many Americans and people in some other parts of the world (most notably the UK and northern Europe) began in earnest. The years 1994 and 1995 were huge for the internet. The NSF pulled out of its funding, making commercial activity feasible, and the World Wide Web moved from concept to realization. Internet Service Providers such as America Online began to connect to the internet, and Americans began to come online in droves, leading to all kinds of culture clashes between those who had been online for years and this new class of users. By the end of the decade, most Americans were online.

Globally, the story is different, however, as it remains within some segments of the American population. Online media are far from universal, either across or within populations. Many books and articles have been written addressing the issues of the "digital divide" (e.g. Norris, 2001; Warschauer, 2004). As a whole, digital divide research has little to say about interpersonal connection, the topic of this book. Its focus is usually on issues such as political participation, career advancement, and the use of financial and health information (e.g. Hargittai & Hinman, 2008). This research indicates that those most able to use new media are able to use them to improve their lives in ways that those who do not use them are not, increasing social and economic disparity. Everything this book will discuss needs to be understood as happening in a context which only some sectors of the global population can access or engage.

The digital divide is often framed as a simple division between those who have access to the internet and those who do not. Even within countries, there are clear trends in which populations use the internet and which don't. Within United States, survey

research by the Pew Internet & American Life Project (*Who's Online*, 2009) has consistently found demographic differences in which adult Americans use the internet. In their April, 2009, random phone survey of American adults, more men than women used the internet (81 percent vs. 77 percent), and Whites were 12 percent more likely to use it than Blacks, though 5 percent less likely than English-speaking Hispanics. Among young people (18–29 years old) 92 percent used the internet, while only 42 percent of those over 65 did. Income also correlated strongly with internet use. Only 60 percent of people in households earning less than \$30,000/year reported using the internet, while 95 percent of those earning \$75,000 or more did. Education was also an influence, as those who had not graduated from high school reported 50 percent usage compared to the 94 percent of those who had graduated from college. Finally, location matters. People living in urban and suburban communities were 10–12 percent more likely to use the internet than people living in rural areas.

Globally, the disparities are even more striking. The website Internet World Stats (Miniwatts Marketing Group, 2009), which tracks this, estimates that 73.9 percent of North Americans use the internet, 60.1 percent of those in Oceania/Australia do, 50.1 percent of Europeans, 30 percent in Latin American / Caribbean countries, 23.7 percent of Middle Easterners, 18.5 percent of Asians, and only 6.7 percent of Africans. On average, just under a quarter of the world's population use the internet. Within these parts of the world, the factors that affect Americans (education, gender, age, etc.) affect further which members of the population are among the internet users.

In many regions where internet use is lower than in North America, mobile phone use is far more pervasive. A study released by the United Nations' International Telecommunications Union (2009) estimated that, while only 23 percent of the world's population used the internet, 61.1 percent used mobile phones, driven especially by use in Brazil, Russia, India, and China. The report also draws attention to the fact that not all internet is the same – only 6.1 percent of the global population have access to broadband services through a fixed internet connection, and only 5 percent

have it through mobile connections. In the developing world, less than 2-4 percent of the population have any broadband access to the internet. The Pew Internet and American Life Project (Horrigan & Rainie, 2002) found that broadband access is important in shaping whether a person merely reads the internet or contributes content to it.

A 2001 UN Human Development Report is no doubt outdated in its precise numbers, but their analysis of global trends is still apt (UN, 2001). Much of the global population is illiterate, excluding them from much online participation. Worldwide, most internet users remain male, college-educated, and earn higher-than-average incomes. Women are in the minority of users in both developed and developing countries. For example, their report found that only 38 percent of internet users in Latin America were women, while in the European Union the figure was 25 percent, in Russia 19 percent, in Japan 18 percent, and in the Middle East 4 percent.

As the point about broadband suggests, access does not tell the whole story. Even if one sometimes uses a medium, other factors affect how much one is likely to gain from its use. Jung, Qiu, and Kim (2001) developed the Internet Connectedness Index to assess the varying degrees of connectivity that "internet use" may actually entail. Among the variables they identified as important were whether or not one owned a home computer, for how long one had owned one, from how many places a person could access the internet, how much time people spend online, and how many things a person can do online. Howard, Rainie, and Jones (2001) distinguish "netizens" from other users. They defined netizens as people who had been online for at least three years and who go online from home every day. Netizens, they found, are most likely to obtain resources that can improve their lives through the internet.

Eszter Hargittai's work has pointed to the importance of skill. Hargittai (2002) describes a "second level digital divide" that speaks to the differences in skill levels (e.g. understanding internet terminology, searching for and evaluating information) that internet users may have. Hargittai and Hinnant (2008) surveyed a random sample of US young adults. They found that women,

people who had not graduated from college, and those who did not use the internet at home reported lower skill levels and were less likely to visit sites with the potential to improve one's life, such as those offering news, or government, health, financial, and product information sites.

In sum, we are still standing on shifting ground in our efforts to make sense of the capabilities of digital media and their social consequences. New media are constantly developing, new populations are taking up these tools, and new uses are emerging. Who is excluded from or enabled by digitally mediated interaction is neither random nor inconsequential. The same tools may take on very different meanings for different populations in different contexts or different times. It is too soon to tell what the final consequences will be, but it seems unlikely that they will ever be universal or stable. In the rest of this book we'll work with what data we have to fill in what we know now. I hope that astute readers will read between the lines to consider also how much more we have to learn.