Beyond the effects that contemporary media may be having upon our language, we need to think about whether computers and mobile phones are impacting the social fabric as well (chapter 10). Since the early days of mainframes, many people have feared that computers are undermining our sense of community. These concerns proliferated with the explosive growth of computer-based communication such as email. The good news is that most contemporary studies examining the social effects of Internet use indicate we have more cause for relief than concern.

Even if avid email users are not doomed to be social recluses, there are subtle—and perhaps more troubling—ways in which communicating online (or by mobile phone) is reshaping us, less by virtue of the mechanisms themselves than by the way we use them. Increasingly, more and more people are "always on" one technology or another, whether for communicating, doing work, or relaxing by surfing the web or playing games. Regardless of the purpose, the fact that we are always on means that we need either to drop some other activity or multitask. And so our final question in the book is this: What kind of people do we become—as individuals and as family members or friends—if our thoughts and our social relationships must increasingly compete for our attention with digital media? These are not simply academic questions for scholars to debate at conferences. Rather, the answers directly affect each one of us.

• • • HOW TO READ THIS BOOK

Always On is written for a variety of readers: people curious about the Internet and mobile phones, teachers and parents trying to get a fix on the likes of IM and blogging, students of new media, linguists seeking a scholarly analysis of online language. Writing for all of these audiences at once can be a challenge. Some of the topics we deal with lend themselves to close reading while the tone of others is more conversational.

The book is designed to be read from start to finish, but depending upon your interests you may gravitate to some chapters more than others. Results from my empirical studies appear in chapters 3, 4, 5, and 7. People wanting just "the big picture" can figure out what to skim in the relevant sections.

If you are one of those people who jump to the end of mystery stories to discover "who done it," then plunge forward to chapters 8, 9, and 10. My hope is that by the time you have read the conclusions, you'll want to go back to the earlier chapters to discover the rationale behind them.

From The Young & The Digital by S. Craig Watkins

2

• • • Language Online

The Basics

It was early November 1493 when Christopher Columbus and his crew arrived on the island of Guadeloupe in the Caribbean. Among his discoveries was a strange fruit, known locally as *nana*. Writing in his diary, Columbus explained that the fruit "is shaped like a pine cone, but it is twice as large and its flavor excellent. It can be cut with a knife like a turnip, and it seems very healthful."[1]

Columbus brought the fruit back with him to Spain, from whence it made its way to England in the mid 1660s. But what was the new delicacy to be called? The simple solution was to piece together words already in the language: *pine* (because the base resembled a pine cone) and *apple* (at the time, still the generic term for "fruit").

As technology has evolved, new devices have often been named (at least temporarily) by familiar words and concepts. The telephone was originally designed as a "harmonic telegraph." What today we call *movies* were first known as "talking pictures" or "talkies." Other original terms have stuck: An automobile (that is, *auto*, as in "automatic," plus *mobile*) is still *automobile*—unless, of course, it is *car*.

As the functions of computers expanded from doing computations to storing data, creating documents, and enabling people to communicate through networking, again there was a need for new nomenclature. In the early days of cross-machine communication, a number of terms began appearing in the nascent literature to denote language appearing online: "interactive written discourse," "e-mail style," or "electronic language." A few years ago, David Crystal introduced the word "Netspeak," denoting the linguistic features characterizing the range of Internet-based language.[2]

In the 1980s the term "computer-mediated communication," more commonly known as CMC, emerged to encompass a range of platforms used for conversing online, including email, listservs, chat, or instant messaging. With

the development of mobile devices such as the BlackBerry and mobile phones, which aren't really computers, the term CMC became something of a stretch. Many researchers began speaking of information communication technologies (ICTs), alluding to the machines themselves (computers, personal digital assistants, mobile phones) rather than to the information they conveyed. What we now needed was an umbrella term for various types of language transmitted via the gamut of ICTs. Several colleagues and I have begun speaking of "electronically-mediated communication" (or EMC) because, like *pineapple*, the phrase does its job.

So much for terminology. What kinds of online and mobile language are we talking about?

• • • IN THE BEGINNING

The origins of new technologies often turn out to be more prosaic than popular imaginings. We understandably assume that Alexander Graham Bell's famous 1876 call to his assistant, "Mr. Watson, come here. I want you!" signaled the scientific triumph of conveying the first voice message across a telephone line. In actuality, Bell summoned Thomas Watson from the next room because he, Bell, clumsy as usual, had spilled sulfuric acid on himself and needed help cleaning up.[3]

The first email message was equally mundane. In 1971 Ray Tomlinson (a computer engineer working at Bolt Beranek and Newman) sent an arbitrary string of letters between two minicomputers that, although networked through a precursor of the Internet, were actually sitting in the same room. This first email was hardly an exercise in interpersonal communication. It did, however, engender a convention that helped define the way all email henceforth would be sent. To clarify the recipient and machine location to which a message was addressed, Tomlinson selected the @ symbol, which separated a user's login name from the name of his or her computer.[4] Today, we are all too familiar with the format of email addresses such as jcaesar@rubicon.mil.

Telephones and email are just two of the technologies for communicating information across distances. Since the human voice can reach only so far, societies have long used smoke signals or drum beats to convey messages to those outside of earshot. Semaphores and the telegraph were more sophisticated technologies for accomplishing the same goal. With the development of computers, written messages could be transmitted only if there were a system for linking machines together. Therefore, our story of electronically-mediated communication begins with a brief look at the networking systems that made EMC possible.

The earliest computer networks were created by the U.S. military for sharing numerical data between research sites. Over time, the same binary coding system developed for sending numbers was used for transmitting language. ARPANET (the U.S. Department of Defense's Advanced Research Projects Agency Network) was built between 1968 and 1969, under a contract with Bolt Beranek and Newman.

Civilians began joining the networking community in the late 1970s and early 1980s. Homegrown bulletin board systems (BBSs), carried over telephone dial-up lines, connected clusters of friends and helped create the earliest online social communities. While the best known of these groups was the WELL (Whole Earth 'Lectronic Link), the number of online communities quickly mushroomed. Computer scientists were not far behind in creating networking systems that were independent of the military-based ARPANET. In 1979/80, USENET (UNIX Users Network) was developed at the University of North Carolina as a kind of "poor man's ARPANET."[5] An important function of USENET was to carry distributed online forums known as newsgroups (a form of CMC we'll return to in a moment).

Enter the Internet in 1983. Over time, through a few twists and turns, the old ARPANET became the Internet, which was a federally funded project linking multiple computer networks through a specific type of communication protocol known as TCP/IP.

The infant Internet was a potentially dynamic tool but not one easily harnessed. In the early 1990s, Tim Berners-Lee designed the World Wide Web, essentially a collection of software tools and protocols that make it relatively easy for computers to communicate across the Internet. A number of earlier functions (such as email) were ported to the web, making the exchange of information incredibly smoother.

The most important step toward user-friendliness was the emergence of tools for searching the web. Having thousands of web pages out in cyberspace was of little tangible value if you didn't know where to find them. The 1990s saw the rapid appearance of a succession of search tools, most of which were free to end-users. Gopher (also the name of the University of Minnesota's mascot) was designed in the early 1990s for locating documents on the Internet. In 1993, Marc Andreessen at the University of Illinois created the web browser Mosaic, the commercial version of which, Netscape, appeared in 1994. Microsoft's Internet Explorer followed in July 1995. In September 1998, Google made its debut. By March 2007, roughly 3.8 billion Google searches were being done in the United States per month.[6]

All these networking (and search) tools provide infrastructure for transmitting written language online. But how are the messages conveyed?

• • • SORTING OUT THE OPTIONS

Electronic communication can be divided up along two dimensions. One is synchronicity: Does communication happen in real time (synchronous), or do senders ship off their messages for recipients to open at their convenience (asynchronous)? The other dimension is audience scope: Is the communication intended for a single person (one-to-one) or for a larger audience (one-to-many)? Here's what the scheme looks like:

	asynchronous	*synchronous*
one-to-one	email, texting on mobile phones	instant messaging
one-to-many	newsgroups, listservs, blogs, MySpace, Facebook, YouTube	computer conferencing, MUDs, MOOs, chat, Second Life

In terms of chronological appearance, here's another view of the specific technologies:

1971	Email
1971	Early Computer Conferencing
1979	MUDs (Multi-User Dungeons/Dimensions)
1980	Newsgroups
1986	Listservs
1980s, early 1990s	Early Instant Messaging (IM) (e.g., UNIX talk, ytalk, ntalk)
1988	IRC (Internet Relay Chat)
1990	MOOs (MUDs, Object Oriented)
1992	Text Messaging on Mobile Phones
1996	ICQ ("I Seek You") (modern IM system)
1997	AIM (America Online Instant Messenger)
1997	Blogs (Web Logs)
2003	Second Life
2003	MySpace
2004	Facebook
2005	YouTube

Given the pace at which online language technologies have evolved, it's easy to lose track of the historical roots of today's latest communication platforms. And in many cases, the identity of innovators has become obscured. Our discussion acknowledges how modern electronically-mediated communication builds upon the hard work of its predecessors.

For clarity, I've organized the overview according to the four-way schema of asynchronous versus synchronous, and one-to-one versus one-to-many. In this chapter, we focus on written communication. Later on, we'll look at audio and video exchanges. Some of the technologies we discuss are obviously yesterday's news. They're included here both for historical completeness and to illustrate that contemporary communication tools are often filling earlier functions: New bottles for old wine.

A word of caution: Although it's common to speak of asynchronous versus synchronous communication as if the two are polar opposites, in actuality they fall along a continuum. In a sense, the only real synchronous communication is that in which one person can interrupt another—the prototypes being telephone conversations or face-to-face speech.[7]

One-to-One: Asynchronous

Email

Without question, email became the killer application for networked computers, once the Internet was in place and the cost of computer hardware and connectivity had begun to drop. The technology is now an indispensable part of modern work and play, love and war.

"Hi. My name is Barry, and I check my E-mail two to three hundred times a day."

In principle, email is a one-to-one asynchronous medium. However, neither of these characteristics is always true. Senders and recipients are free to broadcast messages as they see fit, either publicly or sub rosa. Jack may email Jill but send copies (declared or as blind copies) to Tom, Dick, and Harry. In turn, Jill may take email from Jack and forward it to Jane, along with the new subject line "What an Idiot!" The idea of synchronicity is also up for interpretation. Twenty years ago, it sometimes took hours (even days) for an email to wend its way from me to you. These days, computer servers and signal transport speeds have improved enormously. Lag time may be as short as a second or two, making email essentially synchronous, if you choose to use it that way.

Much has been written about email, but curiously, we have very little tangible data beyond anecdotes.[8] Researchers are often hesitant to ask colleagues—or strangers—for logs of their email correspondence, perhaps for fear people will say no. As a result, the majority of empirical studies of computer-mediated communication have been of one-to-many public forums such as newsgroups and chat, where the researcher can pull quasi-public transcripts off of the Internet.

What we do know definitely about email is that it shows incredible variety in both form and function. In response to parental pressure, a reluctant ten-year-old sends Grandma an email, thanking her for a Christmas present, while a trial lawyer puts opposing counsel on notice, by email, that his client refuses to settle. After dispatching a hastily written email to a friend, saying I'll be late for our luncheon meeting today, I turn around and carefully edit my email requesting a larger budget next year. Trying to characterize email style with a "one size fits all" definition is about as meaningless as describing an "average" American meal: meatloaf or minestrone? potato pancakes or pad thai? cola or cappuccino? By now, email has become sufficiently domesticated, at least in the United States, that its style and content are as diverse as the people using it.

Text Messaging on Mobile Phones

In America, relatively easy access to computers made email, and later instant messaging, convenient ways of sending written communiqués to family, friends, and co-workers. By contrast, in much of the world, especially where computers were less ubiquitous, mobile phones largely assumed these functions.

In the early 1990s, a multinational European effort known as Groupe Spécial Mobile, or GSM, established a uniform mobile telephone system for much of Europe. Over time, and as the GSM network has been adopted by large sections of the globe, GSM has come to mean "Global System for Mobile Telecommunications."

The GSM system was originally designed to convey voice signals from one place to another, much as landline phones do. When the project was essentially complete, a bit of bandwidth was left over. GSM allowed customers to use this space for pecking out simple written messages on the phone keypad. For example, on the "2" key, one short tap would represent the letter *A*; two taps, the letter *B*, and three taps, the letter C. Lettering had already appeared on mobile phones, a relic of the days in which area telephone exchanges had names. (When I was a child, my phone number was "GR 4–2525," with the "GR" standing for "Greenbelt," the name of the town with that exchange. Today, the same number would be "474–2525.")

Thus text messaging was born. On the GSM system, texting was known as SMS, standing for Short Message Service. In everyday parlance, most people spoke of SMS as meaning "short text messaging." With time, GSM turned SMS into a highly lucrative business, particularly because the costs per transmission were lower than for voice calls. Teenagers and young adults—whose funds were generally limited—became heavy users of the service, creating an immensely popular mobile language medium in the process.

These days, several alternatives have emerged for simplifying texting input. A number of handset manufacturers offer phones with full tiny keyboards (similar to a BlackBerry). Predictive texting programs (also sometimes known as T9 programs) enable users to type one or two letters of a word, and then a software program offers up the full word, predicting the user's intent.[9] Chapter 7 looks at mobile telephony, both talking and texting, with special focus on how the technology is emerging in the United States.

One-to-One: Synchronous

Instant Messaging

Returning from mobile phones to computers, our next stop on the EMC tour is instant messaging (IM). In principle, the essential difference between email and IM is synchronicity: Email is asynchronous and IM is synchronous. I might send you an email at midnight and not expect a reply until a decent hour the next morning. With IM, I only message you when I know you are online and there is good reason to anticipate a boomerang reply. At least, that is how, in principle, the two systems of one-to-one communication work. Chapters 3 and 4 reveal that the world of IM is actually more nuanced.

The emergence of IM as a communication technology was a two-stage process. Stage 1, which dates to the 1980s and early 1990s, took place on a limited number of American university campuses and research sites, with the development of UNIX applications with names such as "talk," "ytalk," and "ntalk," and the Zephyr IM system created through Project Athena at the Massachusetts Institute of Technology.[10] In the late 1990s, IM become a widespread phenomenon, thanks in large part to Mirabilis Ltd's ICQ ("I Seek You") and to the technology and marketing efforts of America Online (especially AIM—AOL Instant Messenger). ICQ, which first appeared in 1996, was purchased by AOL in 1998. Other contemporary players in the IM market include Yahoo! Messenger, MSN Messenger, and Google Talk. Increasingly, today's IM systems provide audio and video options as well.

Most IM platforms offer far more than just opportunities for carrying on synchronous conversations. Typical add-ons include profiles, buddy lists, away messages, and the ability to block would-be message-senders.

Profiles are personal information forms, in which users can input contact information (physical addresses, mobile phone numbers, email addresses); date of birth and home town; favorite quotations, books, or bands; and so forth. Often posted in innocence, information on the profile has gotten many teenagers into serious trouble from predators.

Buddy lists are devices for defining your circle of friends. Essentially they are lists of the IM screen names (the IM equivalent of email addresses) of those people with whom you want to share information about your comings and goings. Your buddies know when you are logged on to IM and when you are offline. (Traditionally, you could only send a message when you were visibly online and the person with whom you were IMing was as well, though other options have been introduced more recently.)

Buddies also have access to so-called away messages, which people ostensibly post to announce that although they are still logged on to IM, they won't be checking messages because they have moved away from their computer—to get something to eat, take a nap, go to the bathroom, or attend class. In reality, away messages have become far more creative tools in the hands of teenagers and young adults.

What if you don't want particular people on your buddy list to contact you? The drastic solution is to remove these individuals from your list altogether. A temporary fix is to block a specific person, which can easily be accomplished by changing a single IM setting. When blocked individuals log on to their IM systems, they appear to be offline and therefore not available to be messaged.

One-to-Many: Asynchronous

Newsgroups

The earliest asynchronous form of one-to-many online communication was newsgroups. These public forums (some still exist) originally resided on USENET. Newsgroups entail postings to a common public site, which can be accessed whenever users choose to log on. The network of different newsgroups has historically been vast. Tens of thousands of groups represent seemingly every topic imaginable, from sex to antique cars to medicine. Newsgroups are not restricted in membership. Consequently, the language appearing in posts varies enormously, both in style and propriety.

As the Internet has evolved, the role of newsgroups was largely supplanted by new one-to-many forums, both asynchronous (such as blogs that invite comments) and synchronous (most notably chat rooms). The newsgroups that flourished in the 1980s and early 1990s established important precedents for publicly posted discussions with strangers.

Listservs

If newsgroups fostered conversation with outsiders, listservs were developed to communicate within social groups whose members knew each other or at least worked in the same organization. Listservs descend from mailing list programs created for sharing information across the ARPANET. As the popularity of mailing lists spread in the 1980s, software written by Eric Thomas in 1986 (and named LISTSERV) helped automate such list-maintenance functions as adding or deleting members, and posting and distributing messages.

In its simplest form, a listserv (sometimes still called a mailing list or distribution list) enables an individual to send a message, such as announcement of a meeting, to two or more recipients. Frequently, though, postings are made by multiple members of the list, providing an electronic forum for discussion. Today, listservs are commonly used by professional organizations or groups of people sharing common interests—members of a junior soccer league, retirees who like clog dancing. Lists may be unmoderated (postings are automatically distributed without review by anyone) or moderated (someone collects messages received over a period of time and edits them in some way before posting—enumerating the topics covered, summarizing contents of the posts, or censoring objectionable material).

Listserv messages are sent and received as email. The platform tends to be associated with the workplace or with people who have workplace experience. Teenagers and college students are less likely to use listservs—or

sometimes even to know what they are. Blogs and social networking sites, more often the province of youth, can be configured to accomplish roughly the same goals.

Blogs (=Web Logs)

While email took more than twenty years to reach a basic level of domestication, blogs were nearly an overnight sensation. The word *blog* comes from "web log," a term coined by Jorn Barger in 1997 to refer to a list of web-site URLs that the person creating the list found to be of interest and wished to share with others. Some web logs consisted of a set of headlines, followed by links to the original sites. Others offered brief news summaries or discussions of contemporary issues. In either event, frequent updating was common.

In short order, "web logs" morphed into blogs, and the genre exploded in popularity. Helping fuel this revolution was the introduction of software tools (often free) enabling average Internet users to create their own blogs without knowing HTML (hypertext markup language—the computer language in which much of the coding for web sites has traditionally been done). By the mid-2000s, blogging platforms such as Blogger and LiveJournal were encouraging teenage girls to keep online diaries, would-be social critics to get their political two cents in, stay-at-home mothers to share secrets for toilet training, and undergraduates studying abroad to update friends back home. Chapter 6 analyzes blogs in more detail, with a special eye toward understanding the roots of their appeal.

MySpace, Facebook, and YouTube

Among the newest arrivals on the one-to-many asynchronous communication scene have been social networking sites such as MySpace and Facebook, along with video counterparts like YouTube.[11] While some of these platforms (especially Facebook) historically restricted the community of users having access to information posted, others (such as YouTube) have always been open to the general public. Chapter 5 takes a closer look at Facebook. The YouTube phenomenon is addressed in chapter 6.

One-to-Many: Synchronous

The last category of electronically-mediated communication brings us a step back in time. For nearly twenty years (all of the 1980s and much of the 1990s

as well), one-to-many synchronous communication was perhaps the best-known context for communicating online. Some of these platforms (such as chat) still exist, but others have largely been replaced by newer pursuits, including massive multiplayer online role-playing games such as World of Warcraft.

Computer Conferencing

Long before there were personal computers, even before the general public thought computers had anything to do with their lives, Murray Turoff was looking to harness computer power to enable people in dispersed physical locations to communicate in real time. The year was 1971. Turoff worked for the U.S. Office of Emergency Preparedness, which was interested in developing decision-making communication systems for use under catastrophic circumstances, including nuclear attack. Turoff devised a scheme known as EMISARI (Emergency Management Information Systems and Reference Index), which used a mainframe computer to link participants around the country who were sitting at teletype terminals (think of glorified electric typewriters) connected via long-distance telephone lines. EMISARI worked like a text-only telephone conference call.[12]

Today, text-based conferencing has largely been eclipsed by other communication tools, along with more sophisticated versions of the traditional telephone conference call. Inexpensive telephone rates, speaker phones, and video conferencing (not to mention Internet telephone protocols such as Skype) make lengthy textual exchanges in real time feel as old-fashioned as ship-to-shore radios. Computer-based technologies sometimes operate simultaneously but sub rosa. Lawyers and business people commonly shoot emails or IMs to colleagues during telephone conference calls, offering advice about what to say or topics to avoid. When the proceedings get boring, the same players send personal messages to make use of slow time or even stay awake.

MUDs (Multi-User Dungeons/Dimensions) and MOOs (MUDs, Object Oriented)

Readers who remember the Watergate break-in or when the Beatles first sang "Yesterday" may well know about MUDs. These online adventure games were originally modeled upon "Dungeons and Dragons," a fantasy role-playing game from the early 1970s. MUDs are synchronous environments in which multiple players interact within a textually created imaginary setting.

The first such online adventure game was created in the late 1970s by Roy Trubshaw and Richard Bartle at the University of Essex.

Why "MUD"? Originally, the letters stood for "Multi-User Dungeons." Over time, the acronym came to be more neutrally billed as "Multi-User Dimensions."

When the early MUDs were designed, computers had very limited graphics capability. Players were necessarily restricted to verbal descriptions of scenes, actions, and emotions. Unlike newsgroups (which talked about the real world, using asynchronous postings to the public at large), MUDs allowed a comparatively restricted circle of participants to move synchronously through scenarios of their own construction. Players assumed pseudonyms and interacted according to preestablished navigation rules for traversing a defined terrain.

For their first decade, MUDs were heavily dominated by male players engaged in otherworldly adventures. Over time, MUDs began expanding to include wider ranges of participants and more social functions. Object-oriented programming was introduced into MUDs, yielding the concept of MOOs (translation: MUDs, Object Oriented), so named in 1990 by their creator, Stephen White at the University of Waterloo. That same year Pavel Curtis extended the programming power of MOOs through a program called LambdaMOO. MOOs commonly are based on real-world locations (a university campus, a house), inviting participants to speak and act within particular zones (such as a room or a walkway). By the mid 1990s, MOOs were appearing in social and educational contexts, and graphics and sound were introduced as well.

Today, some die-hard early gamers continue to do combat in MUDs, although most have moved on to sophisticated commercial online multiplayer games or Second Life. Some educational MOOs are still around, but their heyday has ended.

Chat

If MUDs and MOOs created virtual worlds through which to move, chat was created simply to converse. Generically, chat is a synchronous platform for holding conversations with multiple participants. Early precursors included Turoff's EMISARI and then, in the 1980s, UNIX-based "talk" programs, which allowed several users to engage in instant messaging simultaneously. However, chat as we now know it wasn't born until 1988, when Jarkko Oikarinen, a student at the University of Oulu in Finland, wrote a program that came to be known as Internet Relay Chat (IRC), intended as an improvement on UNIX "talk." By the early 1990s IRC became known to the wider public, serving as a template for more generic chat programs available through Internet providers such as America Online and through the web.

Similar to the protocol for newsgroups, participants in chat enter into a "channel" (for IRC) or "room" (for AOL), ostensibly dedicated to a specific topic. With chat, however, the medium is synchronous. It also invites both playful and manipulative behavior. Users log on through nicknames (akin to participation in MUDs), free to camouflage their real-world identities, including age, gender, and personal background. While conversation takes place in real time, users can (as with newsgroups) scroll back through the archive to respond to earlier postings. Like newsgroups, listservs, blogs, and MUDs or MOOs, chat generates a quasi-public textual record.

Chat rooms became immensely popular in the United States in the 1990s, as a growing number of home-computer users paid their monthly fees to be connected to the Internet and then found themselves glued to the computer screen for an evening's entertainment. But then two things began to happen, causing chat rooms to lose some of their appeal. The news media issued troubling reports of people (commonly teenagers) being lured from online conversation with strangers into real-life encounters, sometimes with deadly results. At the same time, alternative online forums with more controlled access (such as educational MOOs or collections of buddies on IM) offered social alternatives. When I ask my American college students if they enter chat rooms these days, a typical answer is, "No, I did that as a kid, but not anymore. It's too creepy out there."

Second Life

Besides one-to-many asynchronous social networking sites such as Facebook, MySpace, and YouTube, the place to be in 2008 for synchronous virtual action is Second Life. Second Life might be thought of as a cross between a massive multiplayer online role-playing game and the DreamWorks Animation studio. Designed by Philip Rosedale's Linden Lab (originally located on Linden Street in San Francisco) and opened to the public in 2003, Second Life describes itself as a "3D online digital world imagined, created, and owned by its residents."[13]

Participants in Second Life build alter egos (as with MUDs), but they create a great deal more as well. You may purchase land (for real money, exchanged for Linden dollars), hawk goods and services (even making a decent real-world living),[14] go off on wild virtual adventures, or use a Second Life site for teaching a university course.[15] Such commercial enterprises as Sears and Circuit City are building virtual stores—for selling real products.[16] By mid-2007, Second Life boasted more than seven million members.

• • • ELECTRONICALLY-MEDIATED COMMUNICATION: A GROWTH INDUSTRY

So many ways of harnessing computers (and computer technology) to communicate. But how many people use which types?

Like trying to lash the wind, attempting to provide up-to-date usage statistics is a treacherous task. Reliable tallies are often a year or two out of date by the time they are issued. Add in the period between which I pulled these statistics and you picked up this book, and the gap starts widening into a chasm.

What to do? Statistics are useful, even if they aren't absolutely current. They establish benchmarks against which we can measure future development of electronically-mediated communication. What's more, comparing statistics across national and cultural boundaries offers insight into how and why patterns of online and mobile communication have taken different turns in diverse social groups.

Before doing the numbers, we need to prepare ourselves for methodological inequities and uncertainties. Two research organizations may ostensibly be measuring the same phenomenon, when in fact their studies don't control for identical variables. If you are counting how many Americans use text messaging, do you include people who have tried texting once or twice (then abandoning it) or just those who are regular texters? If you're tallying how many IMs are sent a month, have you included IMs sent on mobile phones rather than only via computers? We have reasonably reliable figures for some countries or demographic groups, but not trustworthy information on others.

With these statistics, caveat emptor. Take them as general indicators of some contemporary usage patterns, not as comprehensive or as gospel truth.

Internet Access

Putting aside web-enabled mobile devices, you need access to a personal computer connected to the Internet to engage in online language. According to Internet World Stats, as of March 2007, 70 percent of the American population used the Internet, compared with 39 percent of Europeans and 17 percent of the world as a whole.[17] Historically, the Internet was largely the province of English speakers (and the English language). In 1996, English was the native language of 89 percent of Internet users. By 2006, more than two-thirds of those on the Internet were native speakers of some language other than English.[18] Internet World Stats reports that 30 percent have

English as their native language, 14 percent are native speakers of Chinese, 8 percent are native speakers of Spanish, and nearly 8 percent are native Japanese speakers.[19]

Statistics on Computer-Based Communication Platforms

Once people have Internet access, in what types of online communication are they engaged? The predominant language application is still email. According to Ferris Research, six billion business emails were sent in 2006.[20] Even without knowing precisely what counts as "business," six billion is a huge number.

IM has also become a pervasive platform for one-to-one online communication. ComScore Media Metrix reported that as of May 2006, there were nearly 340 million people worldwide with instant messaging accounts.[21] Given the number of teenagers and young adults (at least in the United States) who maintain multiple IM accounts, that number could be slightly high, but even an estimated one out of every twenty people on the planet communicating by IM is formidable, especially considering that the modern medium is barely a decade old. (The world's population is roughly 6.6 billion.)

Blogs and Facebook are good examples of asynchronous one-to-many platforms whose usage has soared. While no one really knows how many blogs are out there, Technorati reported in May 2007 that it was tracking 83.1 million blogs, and that more than 175,000 new blogs were being added every day.[22] As for Facebook, comScore Media Metrix indicated there were 24 million members by spring 2007.[23]

Mobile Phone Statistics

Computer-based communication tells only part of the story of how electronically-mediated language is being created and conveyed. The other major technology is obviously the mobile phone. How many mobile phones are there?

This turns out to be a rather complicated question. Over the years, I have owned four phones in the United States and one that I purchased in the UK. So how many phones should you count me as having? My American handsets were owned seriatim, with all four connected to the same phone contract. Obviously, what we want to tally is phone subscriptions, not handsets.

But the counting problem is still not solved. The phone I bought in Brighton, England, a Nokia 1100, can be used in all countries that are on the GSM system. I just need to purchase a new SIM card (the small computer chip that fits into the back of the phone) each time I enter another country. Over the years, I have bought SIM cards in the UK, Italy, Spain, Greece, Switzerland, Australia, Sweden—and then Italy and Spain, all over again. To purchase a card, I register paperwork with the vendor, thereby creating a new subscription (with a new phone number). If I remain in the country for awhile, I may top up the card by adding money. However, the cards expire if not used within a set length of time. Because more than a year elapsed between my two visits to Italy, and between my visits to Spain, I needed to purchase entirely new SIM cards—complete with new registrations and telephone numbers.

Technically, I have had nine mobile phone subscriptions over the past four years. The fact that these subscriptions were seriatim (like my ownership of handsets in the United States) does not get reflected in the official tallies. Mercifully, most mobile phone users are less fickle than I, though by now it should be clear that statistics on mobile phone usage need to be taken with a hefty grain of salt.

The International Telecommunication Union (ITU) offers the most exhaustive statistics on mobile phone subscriptions worldwide. Because the ITU also provides historical information, along with tallies on landline phones, we can look at current mobile phone data in comparative context. The statistics below were taken from the ITU web site, accessed in June 2007.[24] In each case the data (which I have rounded) represent the number of people, per 100 inhabitants, who had either a landline or mobile phone:

	Landline Phones		*Mobile Phones*	
	2000	*2005*	*2000*	*2005*
US	68	59	39	72
Europe	33	41	37	86
World	16	19	12	34

Several observations jump out from these figures. While landline subscriptions are gradually creeping upward in other parts of the world, they are actually falling in the United States. The reason? Mobile phones are beginning to replace landlines. In the latter half of 2006, nearly 13 percent of American homes had only a mobile phone.[25] Many among those ranks were young adults. A study from early 2007 suggests that among

eighteen- to twenty-four-year-olds, roughly one in four had only a mobile phone.[26]

Second, mobile phones are becoming ubiquitous. If we simply look at subscription numbers versus population statistics, more than one out of every three people on the face of the earth has a mobile phone subscription. Overall, the proportional subscriptions in Europe remain greater than in the United States. According to the ITU, in a number of countries in Europe and beyond, the calculations exceed more than 100 mobiles per 100 people. (Among the clearly multimobiled are Luxembourg: 155, Italy: 124, Hong Kong: 124, and Israel: 112.)

Why would anyone need more than one mobile phone subscription (or phone)? The reasons vary. In the Far East, employees sometimes have a "boss phone" (reserved just for communicating with one's supervisor at work), a second phone for interactions with other business associates, and yet a third for family and friends. Multiple subscriptions can be a cost-saving strategy: Use one SIM card (which means one subscription) for most calls, because it has fairly cheap rates; use another SIM (entailing another subscription) for contacting people on the same telecommunications system such as Vodafone or Telia, because these calls or text messages are free. SIM-switching is particularly common in the developing world, where cost is of major concern.

Text Messaging Traffic

Once you have a mobile phone, there are many uses for it: talking with other people, checking the weather, playing games, purchasing food from vending machines, doing banking, listening to music, and, of course, communicating through text messaging. How many text messages are being sent? Accurate statistics are not easy to come by, especially because the numbers keep multiplying so rapidly.

Here are sample estimates:

- in 2005, more than one trillion text messages were sent globally[27]
- in 2006, Americans sent 158 billion text messages, which was nearly double the number sent the previous year[28]

At the same time, Americans continue to talk on their mobile phones, in part because they pay for massive numbers of voice minutes each month, whether they use them or not. According to the CTIA (the Wireless Association in the United States), customers used 1.7 trillion minutes of talk time in 2006, up 20 percent over 2005.

• • • LANGUAGE IN THE NEW MILLENNIUM

Like typewriters and landline phones before them, computers and mobile phones convey language. But what does the language itself look like?

The earliest discussions of computer-mediated communication debated whether online communication was a new form of language—or a degenerate one. Public discussion in the late 1980s and early 1990s focused on traits such as abbreviations, acronyms, emoticons (also known as smileys), and untidy sentence mechanics (in spelling, punctuation, and grammar). There was also much talk about flaming, that is, using rude—even crude—language.

As CMC moved beyond the academic world in the 1990s, and more everyday users (from teenagers to small business people to grandparents) began using email, listservs, newsgroups, chat, and eventually instant messaging, the tenor of analysis began to shift. The question now was whether CMC in general—or at least email or IM in particular—more closely resembled speech or writing. Overwhelmingly, the verdict was "speech" (based largely upon the fact that messages tended to be informal), though the arguments were typically based on isolated examples—a smiley face here, a *btw* there—rather than upon empirical research.

There were some exceptions. As the phenomenon of online language started to attract academic researchers, solid evidence began mounting regarding the ways in which CMC shared features with formal or informal writing, and with formal or informal speech. Susan Herring's 1996 landmark collection, *Computer-Mediated Communication: Linguistic, Social, and Cross-Cultural Perspectives*, set the standard for the decade of research that followed.

With the continued expansion of email and IM in the late 1990s, and (in the United States) the gradual introduction of text messaging in the new millennium, public discussion began to shift from the linguistic nature of electronically-mediated communication to the effects this sort of language might be having on everyday offline writing. Were IM and texting, especially as practiced by teenagers and young adults, ruining their ability to craft respectable school essays? Were traditional standards of spelling and punctuation (not to mention logical coherence) soon to be left in the dustbin of history?

In February 2005, I chaired a symposium on "Language on the Internet" at the annual meetings of American Association for the Advancement of Science. In preparation for our session, I asked a distinguished panel of experts to think about concrete ways in which language conveyed via online and mobile devices might be influencing spoken and written language. Our consensus was that beyond a few acronyms such as *brb* ('be right back') surfacing in some people's speech, or *lol* ('laughing out loud') or smiley faces popping up in more informal offline writing, the actual linguistic impact of electronically-mediated communication was surprisingly small.

If online and mobile language are not having sweeping effects upon everyday language, then what is the big deal? Are IM, blogs, text messaging, and the like simply interesting curiosities? Or is there more to the story?

In this book I argue that these new forms of language are having profound impacts upon both the linguistic and social dimensions of human interaction. I begin making the case in the next chapter, which lays out how online and mobile language is empowering and emboldening us in the ways we control the "volume" on our communication with others.