1 The New Social Operating System of Networked Individualism

Early on December 3, 2007, Trudy Johnson-Lenz tripped on her front steps as she was walking to her door in a rain storm.[1] She slammed her head on a rock and was knocked unconscious. Her husband Peter struggled unsuccessfully to rouse her and then called the Portland, Oregon, emergency ambulance service for help. By 8 a.m. she was on an operating table at Oregon Health & Science University. Her skull was filling with blood. To give her brain room to swell and heal, neurosurgeons removed a third of her skull, put it in the freezer for later, and removed the blood. The odds of people in her condition surviving, Peter was told, were 50–50, and of the survivors, three-quarters have some disability. Yet, beating the odds, Trudy started recovering just twelve hours later.

Before leaving her bedside, Peter used his mobile phone to snap a few digital pictures of her elaborately bandaged head and breathing tubes. He emailed the pictures and a description of the accident at midnight to some friends and was warmed by the reaction. Within 36 hours, nearly 150 people across North America had sent emails, as friends forwarded the news about Trudy to others. People sent poems, expressions of love and encouragement, and offers of help and prayers. Most were sent to Peter's computer. Urgent and logistics-related text messages came to his mobile phone.

Over the next two days, local friends stepped in to help. John Stapp came to the hospital, treated Peter to a bag lunch, and offered to manage a local meal delivery campaign for the couple. Mike Seely, director of the Pacific Northwest Transplant Bank, introduced the couple to a hospital social worker who started prepping Peter with tips about how to navigate the looming insurance, billing, and financial-aid bureaucracy. Martin Tull and Chuck Ensign ran errands and helped prepare their house for Trudy's safety once she was discharged.

More socially and physically distant acquaintances responded in other ways. Buddies who were volunteer DJs on the local jazz radio station, KMHD-FM, announced their concern about Trudy on air and dedicated shows to her. Among their many passions, Peter and Trudy co-moderate an internet forum on jazz vocalist Kurt Elling's website.[2] Several of the radio station jazz aficionados and Elling forum participants took it upon themselves to burn CDs of their favorite music to send Trudy as she recuperated.

Another recipient of a forwarded email was Lisa Kimball, a friend whom they call a "netweaver extraordinaire."[3] Lisa crafted an email in the name of the Johnson-Lenzes that did something they could not bring themselves to do on their own: ask for financial help. Lisa explained to Peter that she understood how hard and embarrassing it is to ask for money, "but I believe with all my heart that this is what networks are for." The Johnson-Lenzes are self-employed and do not have disability plans or group health insurance. Dated December 7, 2007, Kimball's email read:

Dear friends of P+T, [the online nickname Peter and Trudy have used since 1977]

If you're reading this it's because I managed to convince Peter to send it which makes me very happy even though I'm sure it makes Peter feel uncomfortable. I'm sending a check out to Oregon today. We all know about "pay it forward"—this is about "paying it backward."

P+T's work has influenced and enhanced my thinking for years and years . . . so I feel that I owe them far more than I could ever afford to pay. If we all lived in a physical village the way we're living in this global one we'd be bringing Peter healthy snacks to the hospital, shoveling their walk, filling the fridge, and doing whatever else we could to support them during a very difficult time.

Since most of us are far away, we can't do much of that but we can provide some cash to reduce the stress of figuring out how to deal with the day-to-day while they're dealing with something way more important. . . . If others have some creative ideas about more ways we can enact our network being—count me in!

lisa

Jessica Lipnack, another member of P+T's network, put Kimball's "pay it backward" email on her blog.[4] Soon, other checks arrived, including some from people who had heard of P+T through these online activities but were unknown to them.

In the following months, there were more medical ups and downs, including a harrowing period after Trudy's skull was repaired when she developed a staph infection and underwent emergency surgery. About the same time, Peter suffered a mild stroke. Local friends were indispensable in helping them get the care they required and supporting their daily needs

during these periods of incapacity. For instance, it was Donna Tull, the wife of a friend, and a person Peter had never personally met, who heard about Peter's stroke symptoms and convinced him to seek help. Another "stranger," who was the spouse of a friend, is a nutritionist and recommended a probiotic that helped Trudy at a time she was on an antibiotic regimen. Many others played direct or indirect roles in the care, thanks to two websites created by Peter and Trudy and their friends. Lotsa Helping Hands is a one-stop web-based domain that allows people to set up helping communities to coordinate meal delivery, transportation, schedules of household chores and visits, and expressions of emotional support. Many of them opted for menus created by Sharon Thorne, a friend who worked at a local grocery store in the deli department and was aware of the couple's special dietary needs. Kimball set up an account on the PayPal e-commerce website to accept donations. By autumn of 2008 about ninety friends, family, and associates had made contributions, including people Peter and Trudy had never met in person and one couple who were complete strangers to them. Over thirty people, many of them at a distance, provided meal deliveries, using Lotsa Helping Hands to order from a local deli.[5] This far-flung network used a complex assemblage of email, group software, websites, regular ("landline") phones, and mobile phones to coordinate. "We're basically desktop people," Peter said, "but our cell phones came in handy when we were travelling or when I was at the hospital."

As Peter and Trudy thought about this outpouring of generosity and altruism, they reflected on the power of social networks and the amount of effort required to maintain effective support. In a series of emails to their friends, they meditated on the "art of networking" and the occasionally grueling work of making choices and tradeoffs in order to sustain a social network. Some of their emails began with their twenty-first-century update of a little-remembered quote from Shakespeare's *Timon of Athens*. Timon had said, "I am wealthy in my friends." Their rewrite and occasional email header was, "We are truly wealthy in our network." Tracy and Peter later described their experience for this book's authors:

We have been able to "get by with a little help from our friends," but we had to ask for help first, and that was a big challenge for us. . . . We have learned so much about our own resilience and that of our networks. Each relationship is a source of unique nourishment that has contributed to our healing and recovery. We thought we knew a lot about the art of networking, but this was a whole new experience.

It's been something of a challenge to manage some of the labor-intensive mechanics of networking in the current technological environment: choosing which networking tools to use and when; creating, adding to, updating, and maintaining

email lists; offering opt-outs along the way; finding tools to help with scheduling food deliveries; and tracking and acknowledging contributions of money, food, and other gifts.

On the social side, we have wondered how often to send updates, with how much detail and with photos of what. What's the right balance of optimism, humor, and candidness? We didn't want to add even more to everyone's overload. We were also surprised to hear how much people appreciated getting news of our progress and being included in our circle of support. . . .

Several of you have also told us that we have isolated ourselves too much. Certified INFJs (Myers-Briggs)[6] who prefer to put things in writing and like to immerse ourselves in our projects, we unwittingly opted out of the real-time flows of talk and lots of interaction where trust grows and real work is negotiated. We realize now that we need to schmooze, circulate, and network a lot more to survive!

This is a time in our lives for radical trust, taking a leap, moving along whatever paths we take, and seeing what happens. We surrender. Heads to the floor.[7]

Networked Individualism

We read Peter and Trudy's account and we wonder about the folks who keep moaning that the internet is killing society. They sound just like those who worried generations ago that TV or automobiles would kill sociability, or sixteenth-century fears that the printing press would lead to information overload. While *oy vey*-ism—crying "the sky is falling," makes for good headlines—it isn't true. The evidence in our work is that none of these technologies are isolated—or isolating—systems. They are being incorporated into people's social lives much like their predecessors were. People are not hooked on gadgets—they are hooked on each other. When they go on the internet, they are not isolating themselves. They are conversing with others—be they emailers, bloggers, Facebookers, Wikipedians, or even organizational web posters. When people walk down the street texting on their phones, they are obviously communicating. Yet things are different now. In incorporating gadgets into their lives, people have changed the ways they interact with each other. They have become increasingly networked as individuals, rather than embedded in groups. In the world of networked individuals, it is the person who is the focus: not the family, not the work unit, not the neighborhood, and not the social group.

So Peter and Trudy's account of how they used their social networks is not only a heartwarming tale. It is also the story of the new social operating system we call "networked individualism" in contrast to the longstanding operating system formed around large hierarchical bureaucracies and

small, densely knit groups such as households, communities, and workgroups. We call networked individualism an "operating system" because it describes the ways in which people connect, communicate, and exchange information. We also use the phrase because it underlines the fact that societies—like computer systems—have networked structures that provide opportunities and constraints, rules and procedures. The phrase echoes the reality of today's technology: Most people play and work using computers and mobile devices that run on operating systems. Like most computer operating systems and all mobile systems, the social network operating system is *personal*—the individual is at the autonomous center just as she is reaching out from her computer; *multiuser*—people are interacting with numerous diverse others; *multitasking*—people are doing several things; and *multithreaded*—they are doing them more or less simultaneously.

Peter and Trudy rebuilt their world through their own resourcefulness and with the help of many allies. They used varied branches of their network operating system to find support, solve problems, and improve their knowledge and skills. The actions they took to recover were different from the actions that would have been used by their parents and grandparents. Those actions took place on a different human scale from the one that would have been available to their ancestors facing similar traumas. Those ancestors were embedded in groups and had little opportunity to navigate life by maneuvering through their networks. Yet, to networked individuals like Peter and Trudy, such art is second nature. They worked hard and thoughtfully to take advantage of the wide-ranging skills that existed in their extended social network—their closest friends, *plus* their more varied and extended system of associates, *plus* the new entrants into the network who were connected to them through personal, participatory media.

By Peter and Trudy's reckoning their network has several thinly connected segments. Because their friends traveled in different milieus, their friends needed contact and coordination in order to help. About twenty of those who helped were close friends and family. Beyond that inner circle was a ring of people who pitched in to help with specific issues even though they were not bosom buddies of the couple. Another ten or so were medical professionals, while another ten or so beyond that were paraprofessionals in the health-care world, the insurance world, the social-work world, or the patient-advocate world. And there were many part-time helpers, contributors, and well-wishers. Some in the network felt tied to the couple because of their common professional interests. Others were linked through their shared passion for jazz. Still others were linked because

they live in Portland—proximity still counts for something, even in the networked age. Beyond them, hundreds of others found the wherewithal to offer help from afar by sending good wishes, advice, money, and job contacts. Collaboratively, this far-flung network made contributions to the couple's emotional, financial, and logistical well-being.

The networked life epitomized by Peter and Trudy's story is different from the all-embracing village that is usually held up as the model of community. In Peter and Trudy's case, the people who were most useful in providing advice on medical decisions often did not know the people who provided emotional and social nourishment. Nor did all network members work closely in sync in providing assistance. Nevertheless, they found ways to work together in helping the couple wrestle with their daily—and future—lives.

So, what's new about this social reality? Haven't many communities pitched in before to help their members? Of course. Yet the way in which Peter and Trudy's network did this is quite different from the way their forebears' communities would have. In generations past, people usually had small, tight social networks—in rural areas or urban villages—where a few important family members, close friends, neighbors, leaders and community groups (churches and the like) constituted the safety net and support system for individuals.

This new world of networked individualism is oriented around looser, more fragmented networks that provide succor. Such networks had already formed before the coming of the internet. Still, the revolutionary social change from small groups to broader personal networks has been powerfully advanced by the widespread use of the internet and mobile phones. However, some analysts fear that people's lesser involvement in local community organizations—such as church groups and bowling leagues[8]—means that we live in a socially diminished world where trust is lower, societal cohesion is reduced, loneliness is widespread, and people's collective capacity to help one another is at risk. While such fears go back at least one hundred fifty years, the coming of the internet has increased them and added new issues: Are people huddling alone in front of their screens? If they are connecting with someone online, is it a vague simulacrum of real community with people they could have seen, smelled, heard, and touched in the "good old days"?

The evidence suggests that those with such fears have been looking at the new world through a cloudy lens. Our research supports the notion that small, densely knit groups like families, villages, and small organizations have receded in recent generations. A different social order has emerged around social networks that are more diverse and less overlapping than those previous groups. The *networked operating system* gives people new ways to solve problems and meet social needs. It offers more freedom to individuals than people experienced in the past because now they have more room to maneuver and more capacity to act on their own.

At the same time, the networked individualism operating system requires that people develop new strategies and skills for handling problems. Like Peter and Trudy, they must devote more time and energy to practicing the art of networking than their ancestors did. Except in emergencies, they can no longer passively let the village take care of them and control them. They must actively network. They need to expend effort and sometimes money to maintain their ties near and far; choose whether to phone, visit, or electronically connect with others; remember which members of their network are useful for what sorts of things (including just hanging out); and forge useful alliances among network members who might not previously have known each other. In short, networked individualism is both socially liberating and socially taxing.

Paradoxically, the technology that promises to connect people also threatens to overload them with extra work. The Johnson-Lenzes told us how it takes them just as much effort and even more time to conduct deeply satisfying electronic communications as it does to conduct person-to-person encounters. They noted that while the internet put more potential relationships at their fingertips and made relationships easy to start, it also made relationships harder to sustain because it brought so many distractions and fleeting interactions into their lives. After making a good connection via email or texting, they wrote, "we want to hear the music of each other's voices and we want to see and touch each other."

Our research supports this. An environment that spawns more social liberation also demands more social effort when people have desires or problems they want solved. This is where technology is especially useful. A major difference between the past and now is that the social ties people enjoy today are more abundant and more easily nourished by contact through new technologies. We will show throughout this book how the internet and other forms of information and communication technologies—what scholars call "ICTs"—actually aid community.

One way to look at the changed environment is to compare the Johnson-Lenzes' social network operating system to the social and media environment of their parents. As Peter and Trudy recall, their parents had a few close friends who literally meant the world to them where they grew up—Portland for Trudy and Denver for Peter. Their mothers did not work

until their children were teenagers. Their parents' milieus revolved around their children, work, volunteer activities like scouting and PTA, regular bridge games, and church.

Peter and Trudy learned to read with the *Fun with Dick and Jane* primer. As children, they got information and diversions from television shows like *The Mickey Mouse Club*, local newspapers and newscasts, magazines such as *Life*, and books checked out of the local library. However, Peter says their parents rarely treated these media sources as resources or tools they could use to tackle problems. Although family members used their home encyclopedia when they needed technical information or material to help with schoolwork, they did not see it as a "go to" information trove that could answer all questions or help solve all problems. Peter's parents would talk about the news with their friends, but they never wrote letters or made phone calls to talk back to the news organizations or newsmakers. Except for gossiping with friends and family, they never created their own version of "news" to share with their acquaintances. The only personal news that they sent around was the occasional letter or card with family updates.

Nowadays, Peter and Trudy use a variety of tools to make sense of their environment and to plot their next steps: the internet, phones, books, magazines, newsletters, and interactions with friends. At the same time, the internet and their phones (landline and mobile) allow them to stay in touch with more people in their social networks, more often, and under more circumstances. They multitask with multiple devices. They find themselves sending emails to those helping them to coordinate household chores while on the same day they process contributions from strangers and do research and consulting work.

"All this technology makes it easier for me to take care of lots of things quickly," Trudy says. "It's a juggling act with all the things I need to do, but I don't know how I'd be able to work with so many people on so many different issues if I didn't have this technology." Rather than being overwhelming, the internet extends her reach—and the reach of people to her. While the internet itself is not overwhelming, Trudy notes that it introduces more demands on her life about how to allocate her attention and manage her personal interactions.

Still, the technology and the social network are not the sole solutions to Peter and Trudy's problems. Despite their wonderful network support, they have been hard-hit financially as a result of their health problems. They have gotten back on their feet with a lot of help from their friends and are slowly rebuilding their lives.

In thinking about Peter and Trudy, we have wondered if their story is unusual because they have been active networkers and community builders since the 1970s—both in person and via ICTs. To be sure, Peter and Trudy have more experience and expertise networking than legions of other Americans. They have been developing social networking concepts, software, and virtual communities since the 1970s. Fittingly, they coined the term "groupware" in 1978 to describe and construct the then-revolutionary software that allowed two or more people to work together online —even before the internet itself had been widely embraced. Today, they realize that they work in social networks, not groups.

Yet, the more we have examined the research that is the heart of this book, the more we see that while Peter and Trudy have been pioneers, many people are actively networking in similar ways. We describe this new social operating system in the rest of this chapter, and we show throughout the book how social networks—combined with personal and mobile ICTs— are shaping how people relate to others, work, play, learn together, and seek out helpful information.

Although we focus on North America, our home and the source of most of our evidence, we believe that our conclusions generally hold true for the entire developed world. These insights also have implications for the developing world, where internet and mobile phone use is mushrooming.

The Triple Revolution's Impact on How Networked Individuals Live Their Lives

Peter and Trudy Johnson-Lenz's story highlights how the Social Network, Internet, and Mobile Revolutions are coming together to shift people's social lives away from densely knit family, neighborhood, and group relationships toward more far-flung, less tight, more diverse personal networks. In their story, we see the changing realities of this new social operating system.

First, the Social Network Revolution has provided the opportunities— and stresses—for people to reach beyond the world of tight groups. It has afforded more diversity in relationships and social worlds—as well as bridges to reach these worlds and maneuverability to move among them. At the same, it has introduced the stress of not having a single home base and of reconciling the conflicting demands of multiple social worlds.

Second, the Internet Revolution has given people communications power and information-gathering capacities that dwarf those of the past. It has

also allowed people to become their own publishers and broadcasters and created new methods for social networking. This has changed the point of contact from the household (and work group) to the individual. Each person also creates her own internet experiences, tailored to her needs.

Third, the Mobile Revolution has allowed ICTs to become body appendages allowing people to access friends and information at will, wherever they go. In return, ICTs are always accessible. There is the possibility of a continuous presence and pervasive awareness of others in the network. People's physical separation by time and space are less important.

Together, these three revolutions have made possible the new social operating system we call "networked individualism." The hallmark of networked individualism is that people function more as connected individuals and less as embedded group members. For example, household members now act at times more like individuals in networks and less like members of a family. Their homes are no longer their castles but bases for networking with the outside world, with each family member keeping a separate personal computer, address book, calendar, and mobile phone.

Yet people are not rugged individualists—even when they think they are. *Many meet their social, emotional, and economic needs by tapping into sparsely knit networks of diverse associates rather than relying on tight connections to a relatively small number of core associates.* This means that networked individuals can have a variety of social ties to count on, but are less likely to have one sure-fire "home" community. Looser and more diverse social networks require more choreography and exertion to manage. Often, individuals rely on many specialized relationships to meet their needs. For example, a typical social network might have some members who are good at meeting local, logistical needs (pet sitting, watering the plants), while others are especially useful when medical needs arise. Yet others (often sisters) provide emotional support. Still others are the ones whose political opinions carry more weight, while others give financial advice, restaurant recommendations, or suggest music and books to enjoy.

Networked individuals have partial membership in multiple networks and rely less on permanent memberships in settled groups. They must calculate where they can turn for different kinds of help—and what kind of help to offer others as they occupy nodes in others' extended networks. They have an easier time reattaching to those from their past even after extended periods of noncontact. With a social environment in flux, people must deal with frequent turnover and change in their networks.

A key reason why these kinds of networks function effectively is that social networks are large and diversified thanks to the way people use technology. To some critics, this seems to be a problem. They express concern that technology creates social isolation, as people rely on tech-based communication rather than richer face-to-face encounters.[9] We find a different story. Technologies such as the internet and mobile phones help people manage a larger, more diverse set of relationships. Consider the many people—and the many kinds of people—that Peter and Trudy could call on. The lesson is this: Rather than the internet or mobile phones luring people away from in-person contact, extensive internet use is associated with larger, more diverse, and growing networks. For example, one study of internet users shows that between 2002 and 2007, there was an increase of more than one-third in the number of friends seen in person weekly.[10]

The changing social environment is adding to people's capacity and willingness to exploit more "remote" relationships—in both the physical and emotional senses of the word. The internet especially helps to maintain contact with *weaker ties*: friends, relatives, neighbors, and workmates with whom people are not very close. While weaker, these ties often provide—as in Peter's and Trudy's case—crucial elements of information, sociability, and support as they seek jobs, cope with health issues, make purchase decisions, and deal with bureaucracies. Most importantly, they are the broader milieus that give people their places in life by providing them a means of connecting to the broader fabric of society. They can function better in a complex environment because the Triple Revolution provides them diversity in several ways, including more access to a greater variety of people and to more information from a greater variety of sources.

The new media is the new neighborhood. The internet plays a special role for networked individuals because it is a participatory medium. To be sure, people still value some neighbors, because living nearby remains important for everyday socializing and for dealing with emergencies large and small. Yet, neighbors are only about 10 percent of people's significant ties. As a result, people's social routines are different from their parents or grandparents. While people see their coworkers and neighbors often, most of their important contacts are with people who live elsewhere in the city, region, nation—and abroad. The internet is especially valuable for those kinds of connections.

Networked individuals have new powers to create media and project their voices to more extended audiences that become part of their social worlds. Their connections can ripen in important ways because the internet offers so many new options for interaction through social media such as emailing

(still the most popular overall), blogging, posting Twitter messages, and Facebook activities. Social media allow people to tell their stories, draw an audience, and often gain social assistance when they are in need. Pew Internet surveys find that more than two-thirds of adults and three-quarters of teenagers have created content online. The act of creating with new media is often a social—and networking—activity, where people work together or engage in short- and long-term dialogues.

The lines between information, communication, and action have blurred: Networked individuals use the internet, mobile phones, and social networks to get information at their fingertips and act on it, empowering their claims to expertise (whether valid or not). They use social media and the web as a vast information store that can help them gather information, find and contact others who have faced similar experiences, compare options when they are making decisions, locate new experts to consult, and get second, third, and fourth opinions when they are assessing the advice they are given. Peter and Trudy had good doctors, but they used the internet and their networks to take charge of their own health care, searching on the web and asking knowledgeable friends elsewhere for advice and comfort.

Such empowerment is not limited to health crises. For example, after people have bought a product, they can turn themselves into broadcasters as they comment on the experience they have just had, rate the product they have just bought, apply their own "tags" to label it in ways that are meaningful to them, and comment about the product on the blog or news site that may have originally led them to the product. Their participation then assists those who come later and can read their comments. The interactive Web 2.0 environment provides innumerable opportunities for expanding one's reach for new relationships, even among the most remote strangers. In this world, a new layer is added to a person's social network—the audience layer sits beyond the weak ties layer. It is made up of strangers, but as Peter and Trudy discovered, even those strangers can play constructive roles when they are activated. The role of experts and information gatekeepers can be radically altered as empowered amateurs and dissidents find new ways to raise their voices and challenge authority.

In this world of expanded opportunity, community building can take new forms. Hobbyists, civic actors, caregivers, spiritual pathfinders, and many others have the option of plugging into existing communities or building their own from scratch. Networked individuals can create new communities around themselves, their interests, even their illnesses—online, in person, and mixes of both. They can also use social media such

as Twitter to discover and make connections to others with whom they share something in common.

Although they do not use Twitter, Peter and Trudy relied on their communities built around futures research, sustainability, social media, virtual communities, and jazz musician Kurt Elling. Not only do they moderate a forum about Elling's work and post news, articles, reviews, and personal information; they also write supportive and informative comments on others' online blogs. They work hard to keep the Elling network vibrant. Similarly, the internet became the environment where a distinct new community formed around dealing with Peter and Trudy's medical and daily living needs, containing both new members and old friends.

Not only do networked individuals participate in social networks, they also take on specialized roles inside those groups. Many interpersonal ties are based on the particular attributes—not the full personality of the whole person. Peter and Trudy's personal health network is typical. It includes family members, neighbors, work colleagues, members of online and offline support groups, expert hunters for medical information in professional literature or reports of clinical trials, and acquaintances coming into the picture because of the particular help they can provide.

Moving among relationships and milieus, networked individuals can fashion their own complex identities depending on their passions, beliefs, lifestyles, professional associations, work interests, hobbies, or any number of other personal characteristics. These relationships often depend on context, which provides networked individuals an opportunity to present different faces in different circumstances, especially online. For example, Peter and Trudy are jazz buffs, organizational consultants, futures researchers, sustainability advocates, software designers, and friends—in multiple environments that only overlap somewhat. Yet, despite their involvement in different milieus, they are still Peter and Trudy wherever they participate. They have a networked self, a core being that emphasizes different identities as they connect with each milieu.

At work, less formal, fluctuating, and specialized peer-to-peer relationships are more easily sustained now compared with the past, and the benefits of boss/subordinate hierarchical relationships are less obvious. Pew Internet surveys show that about three-quarters of all American workers use all the basic tools of internet browsing, emailing, and messaging, and mobile phoning/texting. But that is just the starting point. Many of the most technologically connected workers have jobs built around creative effort rather than manufacturing or standardized paper pushing. This thrusts more autonomy and authority onto individual workers. Flexible arrangements with bosses)

peers, and subordinates encourage independent thinking—and perhaps even creativity.

Networked workers frequently operate in multiple teams, rather than with the same colleagues every day, so their organizational life becomes more horizontal and less vertical. Peter and Trudy have always been a two-person consulting partnership, but through the years they have developed a diverse set of trust relationships to get their projects done. Sometimes such networks develop within organizations with people shifting their work relationships throughout the week. They rely heavily on the internet, within-organization intranets, and mobile phones to obtain and share information and complete tasks.

The organization of work is more spatially distributed. The classic picture of the Industrial-Bureaucratic era of the nineteenth and twentieth centuries has been of people commuting to large factories and offices. Not only was it more convenient to produce goods in one place, but it also was easier to coordinate and control operations. Yet, the Internet and Mobile Revolutions enhance the ability to coordinate and control at a distance, so that goods and services can come from multiple locations. Documents and drawings are now internet attachments or are stored in internet "clouds" where they can be accessed from anywhere. Mobile phones and wireless computers allow dispersed workers—at home, on the road, and in coffee shops—to connect with each other. Air travel—of people and goods—has joined with traditional land and sea transport to facilitate distributed operations.

Home and work have become more intertwined than at any time since hordes of farmers went out into their fields. The interpenetration of home and work goes in both directions. In one direction, workers bring work home from the office to finish off jobs or they may stay home full or part time. For example, Peter and Trudy have always lived and worked in the same place: Their home is their workplace. For others, the new media tethers them to their jobs—they cannot leave work behind when they head out the office door. On the one hand, many feel so burdened by time pressures and the constant threat of demands that they respond and complete tasks even when they are away from their place of work. On the other hand, many feel liberated by being able to avoid long, tedious, and tense commuting. They enjoy the prospect of being able to do "home" activities such as personal browsing of the web, sharing Facebook updates, shopping, and emailing family and friends while they are at work. In short, "home" activities have invaded work while "work" activities have invaded homes.

While ICTs have shattered the work-home dividing line, they have also breached the line between the private and public spheres of life. Mobile phones have made conversations more private than they were in the era when the household phone sat in the middle of the house so that everyone at home could hear at least one end of a phone conversation. Texting has brought another dimension to person-to-person contact by helping it become more private, even in close quarters. Blogs often become quasi-public diaries, and social media such as Facebook, Twitter, and foursquare enable people to inform others of their whereabouts and to announce their momentary thoughts and doings. For example, Peter and Trudy shared widely many details of their operations—including pictures of Trudy with a long row of surgical staples winding around her head. At the same time, heretofore private activity invades public spaces as people speak openly of intimate affairs on their mobiles in public spaces and work on their laptops in coffee shops (hoping that others won't peek too much).

New expectations and realities about the transparency, availability, and privacy of people and institutions are emerging. Reputation management—the selective exposure of personal information and activities—is an important element to how people function in networks as they establish credentials, build trust with others, and gather information to deal with problems or make decisions. In the really old days of wandering tribes and agricultural villages, people knew most things about each other—for better or worse. They felt both comforted by the availability of others and concerned about the surveillance of others.

The turn from groups to networks changed this as people expressed different parts of their behavior in different milieus. At first, the Internet and Mobile Revolutions aided this segmentation: Email, texting, and mobile calling are usually one-to-one media. But the rise of social media has brought people back into one network—happily or not. The most popular social media such as Facebook have offered limited ability—so far—to deal with the subtleties of how people really function in different segments of their networks. Rather, the sites tend to treat each person's network as a monolithic entity that functions in a let-it-all-hang-out milieu. To be sure, it is intoxicating at times for people to share a lot. Many social network participants, especially young adults, say that the advantages of disclosure—for instance by building friendships, enhancing status, and connecting to friends of friends—outweigh the problems they might encounter with too much sharing.

Yet with this re-emergent transparency comes a loss of privacy and the perhaps unwanted commercialization of personal information. Not

only do all Facebook friends learn a lot about the person who they have "friended," but the social media companies can also aggregate and analyze this information and find out what twenty-year-old American students—and their forty-five-year old parents—are interested in. As former Google CEO Eric Schmidt boasted: "We know where you are. We know where you have been. We can more or less know what you're thinking about."[11]

In the less hierarchical and less bounded networked environment—where expertise is more in dispute than in the past and where relationships are more tenuous—there is more uncertainty about whom and what information sources to trust. The explosion of information and information sources has had the paradoxical impact of pushing people on the path of greater reliance on their networks. It might seem that the abundance of information that organizations provide on the internet would prompt people to rely less on their friends and colleagues for facts and advice. Yet it turns out that the increasing amount of information pouring into people's lives leads them to turn to their social networks to make sense of it. The result is that as people gather information to help them make choices, they cycle back and forth between internet searches and discussion with the members of their social networks, using in-person conversations, phone chats, and emails to exchange opinions and weigh options. In short, as the internet and mobile phones proliferate, people behave even more as networked individuals.

Is the Triple Revolution Having a Good or Bad Impact on Society?

The simple answer is: both and more. The research we shall present shows that networked individualism is the reality of many everyday lives. We believe that there is clear evidence that the shift to networked individualism is widespread and is changing the rules of the game. Networked individuals live in an environment that tests their capacities to deal with each other and with information. In their world, the volume of information is growing; the velocity of news (personal and formal) is increasing; the places where people can encounter others and information are proliferating; the ability of users to search for and find information is greater than ever; the tools allowing people to customize, filter, and assess information are more powerful; the capacity to create and share information is in more hands; and the potential for people to reach out to each other is unprecedented. Rather than snuggling in—or being trapped in—their groups, people must actively maneuver in their networks. Some people are more

likely to be network mavens than others, better able to navigate and operate the system.

Different networks operate in different ways. Many provide *havens:* a sense of belonging and being helped. Many provide *bandages:* emotional aid and services that help people cope with the stresses and strains of their situations. Still others provide *safety nets* that lessen the effects of acute crises and chronic difficulties. They all provide *social capital:* interpersonal resources not only to survive and thrive, but also to change situations (houses, jobs, spouses) or to change the world or at least their neighborhood (organizing major political activity, local school board politics). Not only must people choose which parts of their networks to access, the proliferation of communication devices means they must also choose how to connect with others: meet in person, phone, email, text, tweet, or post on Facebook.

This is the era of free agents and the spirit of personal agency. But it is not the World According to Me—it is not a world of autonomous and increasingly isolated individualists. Rather, it is the World According to the *Connected* Me, where people armed with potent technology tools can extend their networks far beyond what was possible in the past and where they face new constraints and challenges that are outgrowths of networked life. Those primed to take advantage of this reality are the ones who are motivated to share their stories and ideas and then invite conversation and feedback. Much of the activity by networked individuals is aimed at gaining and building trust, the primary currency of social networks. There are new ways to offer trust and procure it online, and its basic value is growing because networks are so essential to people's social success. In a world of networked individuals, those who engage in the mutual exchange of intangible or mundane resources have the potential to thrive. These individuals will seek support and seek to provide support. Further, those individuals who are able to balance relationships with people in the various sectors of their social networks—kin, friends, neighbors, associates, and workmates—are better positioned to receive both broad and specialized support.

The changes wrought by the Triple Revolution—in social networks, the *rise of the internet, and the advent of mobile connectivity—are not all for* the good or all for the bad. Rather, some of the changes created by networked individualism are beneficial to people and make society better while others are challenging to personal fulfillment and make society harsher. Some of the changes just make it different in neither a positive nor a negative way. Moreover, the effects of networked individualism often depend on personality traits and environmental contexts.

This book explores how this world came into being, the impact these changes have produced already, and where they are leading. In part I, we describe how the Triple Revolution—the Social Network, Internet, and Mobile Revolutions—affect networked individualism. Chapter 2 examines how the social network perspective differs from the two traditional approaches to understanding human behavior: in groups or as individuals. Chapter 3 looks at the rise of the internet in the United States, how patterns of its adoption changed over time, and the current activities of people online. It notes the special contribution that high-speed, always-on broadband has made to how people connect with each other and information. Chapter 4 shows how mobile phones have moved beyond ways in which people talk on the fly to become key means of always-available accessibility.

Part II shows how the Triple Revolution of social networks, the internet, and mobile access play out in communities, households, and work. Chapter 5 considers the ways in which interpersonal relationships have moved beyond neighborhood communities. Chapter 6 looks inside and outside households to see how the everyday rhythms of traditional household-centered families have moved out of homes as families become networked. Chapter 7 shows the partial transformation of work, with people working in multiple teams rather than hierarchies and work organizations becoming geographically distributed. Chapter 8 describes how individuals can easily create, manipulate, share, and broadcast their ideas. Chapter 9 looks at the special features that digital technology and social networks have brought to how people obtain information.

The two concluding chapters in part III sum things up and look to the future. They try to answer the questions, "So what?" and "Now what?" Chapter 10 organizes what we have learned about how people and organizations can perform well in the world of networked individuals, while Chapter 11 explores the technological and social trends that might affect networked individualism in the coming decade. This world will create greater opportunities for people to build networks of kindred spirits and to amass information and social support to have their needs met. Yet, this world will also offer greater uncertainties, insecurities, and opportunities for surveillance. As the Triple Revolution unfolds, the move to networked individualism will continue.

2   The Social Network Revolution

When we tell people that we are thinking about social networks, they often say *"Oh, Facebook."*[1] Many believe that the Social Network Revolution started with Facebook's emergence in 2004. To be sure, Facebook *is* somewhat of a network. But social networks are bigger than Facebook, and they have been around since the beginning of time when Cain hung out with Abel. Even computer-based networks have been around for decades before Facebook.

In the story of the rise of networked individualism, it is important to realize that the Social Network Revolution came first—before the Internet Revolution or the Mobile Revolution. It is the least obtrusive because it is not a shift in technology, but a shift in how people relate to each other. The Social Network Revolution, which throughout this book we often shorten to the Network Revolution, has been less noticed and commented upon than the technology revolutions partly because the conceptual idea of a social network is simple, yet intangible.

A social network is a set of relations among network members—be they people, organizations, or nations. From a network perspective, several things matter: Society is not the sum of individuals or of two-person ties. Rather, everyone is embedded in structures of relationships that provide opportunities, constraints, coalitions, and work-arounds. Nor is society built out of solidary, tightly bounded groups—like a stacked series of building blocks. Rather, it is made out of a tangle of networked individuals who operate in specialized, fragmented, sparsely interconnected, and permeable networks. Social network analysts focus more on the characteristics of these relationships than on the characteristics of the individual members.

If social networks have long been with us, why have we become more networked recently? The answer is that new technologies and major social changes have resonated with the footlooseness of North Americans and their desire for personal autonomy. North Americans move to new homes

4 The Mobile Revolution

Traditional research has not fully captured the changes that mobile phones and wireless computers have introduced to the network operating system.[1] One way to grasp the magnitude of these changes is to remember scenes from the "old days" and how people functioned in the pre-mobile age.

Almost any movie or TV show from before the Mobile Revolution will illustrate what we mean. The 1970 Neil Simon movie, *The Out of Towners*, is a great example of how much the world has changed because its comedy depends on the lack of mobile connectivity. Unable to get to a landline phone, Jack Lemmon and Sandy Dennis *cannot*: hold their hotel room reservation and the room is given to someone else; call ahead and reschedule Lemmon's crucial job interview when they run into trouble; check on a con artist's false story; summon help or seek follow-up assistance when they are mugged twice, kidnapped, and abandoned in Central Park; or let their children know where they are. One telling moment comes when a police sergeant asks, "Where can we be in touch with you?" if the police recover Lemmon's stolen wallet. Lemmon snorts and tells him they cannot be reached because the couple cannot locate a place where a phone is.

"Where can we be in touch with you?" The question seems quaint now. Yet, before the mid-1990s, almost all phones were place-bound. When the Mobile Revolution took hold, that relationship between place and phone became unhooked, and this has changed the way people connect with each other and with information. Think back to some other cinematic plots— and real-world activities—that rarely occur in our mobile world, such as the examples that follow.

Being attacked while alone: most suspense movies hang on the inability of isolated victims to reach out for help. Think of Alfred Hitchcock films, such as *Rear Window* (1954), when wheelchair-bound Jimmy Stewart impotently cannot warn Grace Kelly as he watches a murderer stalk her in the

building across the way; or *The Rocky Horror Picture Show* (1975), when the innocents Brad and Janet go to a decrepit house to get help with their flat tire—but are then trapped by aliens. Such movies are no longer credible when mobile phones are like having an extra appendage.

Coping with and documenting disasters and traumas: For instance, hotel guests trapped by terrorists in Mumbai in November 2008 used their mobile phones to access hotel floor plans, find escape routes, and alert friends.[2]

Running frantically to the scene of the action to convey important information: Think of Dustin Hoffman in *The Graduate* (1967) sprinting down the street to stop Kathleen Ross at the altar before she marries the wrong guy. A text message would do the same job these days.

Depending on others being uninformed and out of touch: *Ferris Bueller's Day Off* (1986) is a teenage slacker's dream come to life. In the movie, Matthew Broderick successfully skips school because his parents, priggish sister, and the dean of students cannot contact him—and each other.

Getting away with capers because the good guys cannot coordinate: Pew Internet correspondent Betsy notes: "I can't read the alphabet mysteries anymore, such as *A is for Alibi* [by Sue Grafton, 1982]. I keep on saying, 'Where is your cell phone?'"

Failing to communicate in a timely fashion: Romeo and Juliet each committed suicide because of the lack of timely communication. Romeo killed himself because he thought that Juliet was dead. The letter alerting him to Juliet's special sleeping potion never got to him. If only they had texted. The play would have to be rewritten for the mobile era—but would it be more comedy than tragedy if they died because their batteries ran out of power?

The First Mobile Phones Were Heavy Loads

The earliest public mobile communication in the United States was a comedy—at least to one of the participants. In the telling of Motorola engineer Martin Cooper, the first mobile call took place on April 3, 1973, using a two-pound instrument that had a maximum talk-time of thirty minutes and took a year for the battery to recharge. Cooper's version of events is not fully corroborated by others, though it has not been fully refuted either. He says he was accompanied by reporters on a walk in Manhattan and placed the call in front of reporters as a publicity stunt to a longtime rival at Bell Labs, Joel Engel.

Cooper began: "Guess who this is, you sorry sonofabitch?" Cooper says he could hear Engel whisper to a colleague, "It's him again" and the Bell official then hung up. Cooper continued to roam around mid-town Manhattan with reporters in tow, dialing in to Engel's office every once in a while and asking, "Can you hear me now?"

The calls were especially sweet to Cooper for two reasons. The first is that Bell had developed mobile phone technology, but had little idea how to exploit it. Motorola did. "We desperately wanted to avoid having a Bell monopoly of this new technology," Cooper said in an interview. The second is that Engel had been a longtime tormentor of Cooper going back to their high school days. So Cooper made sure to initiate one of the calls from a men's bathroom. "I wanted a way to get back at him; show him that I wasn't just 'Farty McCooper' as he used to call me. I thought I could teach Engel a lesson or two with a real cellular phone." By 1983, Motorola had created a one-pound phone that sold for $3,500.[3]

It is fitting that these first mobile calls were annoying interruptions, given the ambivalent feelings many people have now about the intrusiveness of mobile phones. These early calls came after nearly a century of breakthroughs in radio communication that started with wireless links among ships. They advanced sharply when transistors became a part of mobile telephony in the 1950s and global standards for wireless digital transmissions were established in the 1980s. Citizens band (CB) radios proliferated in the 1970s, affording short-distance broadcast chats for lonely drivers and speed-trap avoiders.[4] Car phones came into being in 1946. In 1955, the American TV show *Highway Patrol* made these phones famous when Broderick Crawford repeatedly barked out "10-4: over and out" to end a mobile conversation. Yet, these phones used eighty pounds of equipment in the early years and needed operator assistance.

Things took off in less than a decade as better technology emerged: Transistor and battery improvements reduced the size of the phones. Signaling capacity also improved and vastly sped up telephone networks' capacity to transmit calls. Cell towers sprouted up quickly in cities and then suburbs as demand grew. Technology switched in the 1960s and 1970s from rotary dial phones to pushbutton touchtone phones. Eventually phones could become "smart"—with pushbuttons used as inputs to computer applications and the internet. Low-cost text messaging, using the phones' pushbuttons (and eventually keyboards), complemented voice calls for many users by the early 2000s. Digital cameras, using charged-coupled devices (CCDs), became standard phone features, allowing users

to take pictures they could share with friends or put on the internet. Increasingly powerful computer chips allowed mobile phones to become smartphones: connecting to the web and hosting a variety of applications such as GPS routing systems.[5]

The World Goes Mobile

Mobile phones have become key affordances for networked individuals as they have become easier to carry, cheaper to use, and able to function in more places. With the proliferation of smartphone applications ("apps"), they have become more than just a phone or a sidekick to computers. Indeed, apps have developed a life of their own and serve users in different ways than personal computers. At the same time, wireless computers have become lighter in weight and easier to use.

The explosive growth of mobile devices—phones and wireless laptops—reflects their routine use. The number of mobile users—and supporting infrastructure (towers, switches)—picked up in the 1990s and accelerated into the early 2000s as prices fell (figures 4.1, 4.2, and 4.3). The number of American subscribers grew from 340,000 in 1985 to more than 302 *million* in 2011, comprising 83 percent of the adult population and 75 percent of teenagers. At the same time, iPhone and BlackBerry became household words. These smartphones were used by 35 percent of adults by mid-2011.[6]
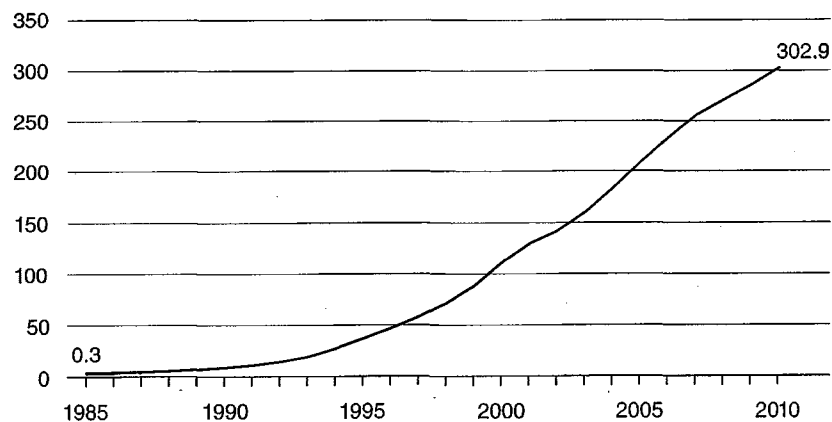

Figure 4.1
U.S. mobile subscriber connections (estimated, in millions).
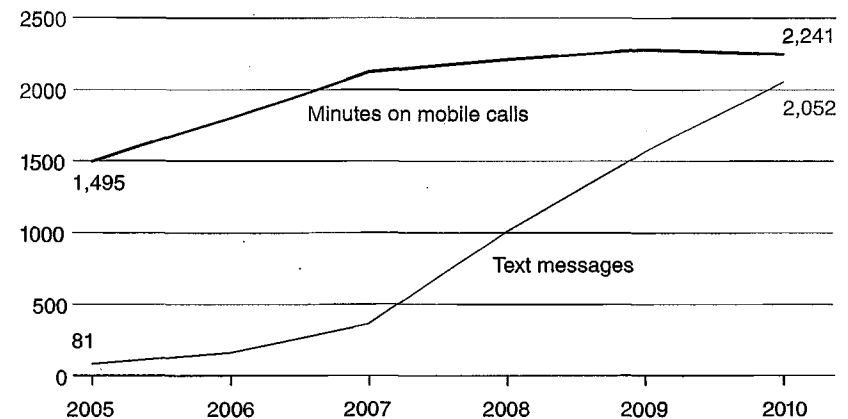*Source*: CTIA.

Figure 4.2
U.S. wireless usage: number of minutes and text messages (in billions).
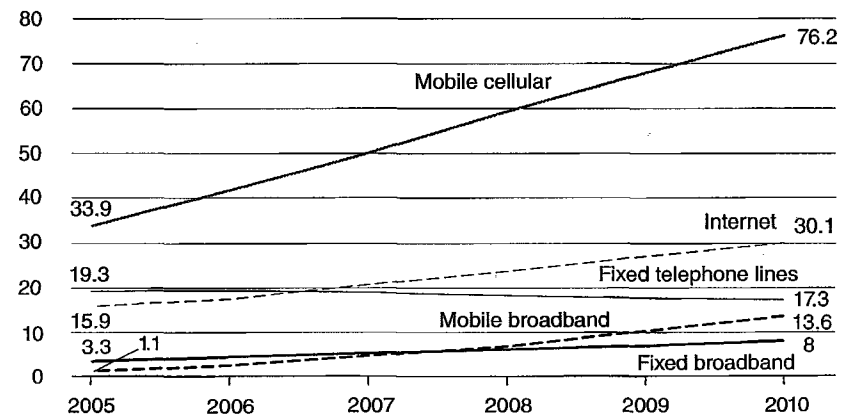*Source*: CTIA.

Figure 4.3
Global ICT ownership growth (per 100 world inhabitants).
Source: International Telecommunication Union.

The evidence shows that the value of mobile phones has grown in several ways. By the end of 2010, the number of American households that had no landline phone and whose occupants were "cell only" rose to 30 percent. Another 16 percent of households with both mobile and landline phones receive almost all of their calls on their mobile phones.[7] Most other Americans use both landline and mobile. At the same time, devotion to mobile phone use has grown. In a 2009 survey, nearly half (45 percent) of Canadians said they "can't leave home" without their mobile phone, with 10 percent of Canadians saying they "can't live" without it.[8]

Most demographic groups show heavy adoption of mobile phones, according to Pew Internet data. Yet, there are still statistically significant gaps when it comes to the poor (those living in households earning less than $30,000), those who are age sixty-five and older, and those living in rural areas (table 4.1). By spring of 2011, the great majority of American adults owned mobile phones, but the same demographic groups that had lagged in 2004 still lagged in 2011, although with higher percentages

Table 4.1
Percentage of U.S. Adults Who Own a Mobile Phone

	March 2004	May 2011
All	74%	83%
Men	74	85
Women	73	81
Whites	74	80
Blacks	73	89
Latino*	76	86
Ages 18–29	79	94
Ages 30–49	82	90
Ages 50–64	75	82
Ages 65+	46	55
<$30,000	56	77
$30K–$50K	76	87
$50K–$75K	84	88
$75,000+	94	96
Urban	75	84
Suburban	77	83
Rural	63	75

*2004 figure is for English-speaking Latinos; 2011 figure is for English and Spanish speaking.
Source: Pew Internet & American Life Project surveys.

of users. But the mobile digital divide is decreasing even more quickly than the earlier digital divide in internet use, and users have become adept at typing on tiny keyboards. Teens are showing the way. Since 2005, mobile phone ownership has become mainstream among even young teens. Three-quarters (75 percent) of teens and 94 percent of young adults aged eighteen to twenty-nine own a mobile phone by mid-2011.[9]

The turn to mobile phones is muting the racial and ethnic digital divides that have worried American policymakers since the mid-1990s. While African Americans have consistently been less likely than whites to be wired internet users, they are more likely to use a mobile phone to access the internet. A May 2011 Pew Internet survey found that while 41 percent of white cell owners go online via their phone, some 53 percent of cell-owning blacks do. Mobile internet connectivity reduces the overall internet-use gap between blacks and whites. Latinos are also heavy users of mobile phones to access the internet, similarly reducing their digital divide with white Americans. Moreover, as teens and young adults grow up and displace non-using seniors, mobile phone use is becoming almost universal in North America, ending at least one digital divide.

The numbers of mobile phone users are way up, but numbers themselves don't make a revolution. As communication scholars James Katz and Marc Aakhus point out, the popularity of this technology changes "*apparatgeist*"— the relationship of people to digital technologies and how that changes the way people relate to each other and to larger social institutions.[10] Pew Internet surveys in 2006 and 2007 confirmed this when they found two broad types of mobile technology users.

The first category, those "Motivated by Mobility," have positive and improving attitudes about how mobile access makes them more available to others. Two-fifths (39 percent) of the survey respondents are heavy participants in the Mobile Revolution. They—and their number has grown rapidly since 2007—are the leading edge of the Mobile Revolution. The data show they are a mixture of young adults, road warriors, and teleworkers—people who tend to desire instant information and those in the survey, disproportionately women, who cherish quick communication. Further, they are more likely to be minorities than whites.

The second category, with 61 percent of the adult population, are the "Stationary Media Majority," who do not feel the pull of mobility—or anything else—drawing them further into the digital world. Landline connections are the norm for them, on their phones and computers. Within this category, one-quarter of the survey population (27 percent) are actively involved with the internet, their mobile use mostly limited

to basic talking and texting, while one-third (34 percent) hardly ever use mobile devices. They tend to be older, poorer, have less than a university education, and are more likely to live in a rural area. Many are "ambivalent networkers," wrote study author John Horrigan. They "bristle at all their gadget-facilitated connectivity, but don't give it up."[11]

Canadians have also widely adopted mobile phones. The Telus Canadians and Technology survey found in July 2009 that about one-quarter of Canadians, aged thirteen-plus report that their mobile phones are the primary way to keep in touch with friends and family (28 percent) and to organize their social life (22 percent). But the percentages double with the young adult generation, aged eighteen to twenty-four. Nearly half look to mobile phones for contact with friends and family (49 percent) and organizing their social life (44 percent).

Although we focus in this book on North America, the Mobile Revolution is a global phenomenon; mobile connectivity around the world has grown even more explosively than in North America. By 2009, there were more than three billion mobile phones in use and cell towers were probably within reach of 80 percent of the world's population (see figure 4.3).[12]

Three economic factors have made global use expand more rapidly than in North America. First, the cost of fixed landlines has always been higher outside of North America—even in the developed countries of Western Europe, Japan, Australia, and New Zealand.

Second, few countries had the extensive—and expensive—copper wire/fiber optic infrastructures that landlines need. Because cell towers are cheaper to build, especially when the density of mobile users is low, many places in the developing world have leapfrogged their shortage of landlines and plunged right into the Mobile Revolution. People prepay for their calls and share their phones. Some use schemes to put cash into their phones for money transfers and purchases.[13]

Third, mobile phones are crucial in less-developed countries because they are often the first means of telecommunications that people have ever had. While mobile phones increase connectivity to people in the developed world, they provide even greater improvements in connectivity and social capital in the less-developed world. They intensify contact with dispersed family members, expand networks, and enhance sociability and support. They substitute for often-difficult travel, provide price information to marketers, and extend business and family relations.[14]

By 2011, more than three-quarters of the world's mobile phones were in less-developed countries, with China alone having some 879 million subscribers (and even more users of shared phones).[15] "For you, it was incremental—here it is revolutionary," asserts Isaac Nsereko of Africa's largest mobile operator, MTN.[16]

Texting Joins Talking

There was comparatively little public and media fanfare in North America about the increasing adoption of mobile phones until users started doing un-phonelike things on their handheld devices in the late 2000s. The most prominent of those has been texting, also called SMS for "short message service." The first texting schemes were created in the late 1980s as data additions to the emerging mobile phone market.[17] Texting took off when pricing plans in Europe and a decade later in the United States started applying relatively cheap rates to 160-character text messages.

Pew Internet surveys show how texting became a mainstream activity for all types of Americans between the spring of 2006 and the spring of 2011, nearly doubling from 31 percent of the population age eighteen and over to 59 percent. As is the case for mobile phone ownership itself, older, poorer, and rural people text the least. Yet, most demographic groups doubled or tripled their texting in this short period.

Teens are especially networked via texting. A 2011 Pew Internet survey of those ages twelve to seventeen shows that the average teen texter sends and receives fifty texts a day (1,500 per month) and one third handle double that volume—over three thousand per month. About two-thirds of all teens use text messaging, "mostly due to its simplicity as well as the privacy of being able to communicate without being heard," says Amanda Lenhart, the principal author of the Pew Internet report. "If teens are a leader for America, then we are moving to a text-based communication system. For them, there is less interest in talking."[18]

With increased texting, the sheer volume of communication greatly increases, and individuals become more networked. Each new communications medium adds onto people's connectivity. It doesn't fully replace the old media—so that the total amount of communication goes up using a greater variety. Pew Internet surveys show that all forms of mobile communication have overtaken the frequency of other kinds of ICTs (information and communication technologies) and even in-person contact—and on mobile phones texting has overtaken talking as the most frequently used teen communication.

Table 4.2
Percentage of U.S. Adults Who Send or Receive Text Messages

	March 2006	May 2011
All	31%	61%
Men	31	61
Women	29	60
Whites	26	56
Blacks	39	68
Latino*	47	71
Ages 18–29	56	89
Ages 30–49	37	77
Ages 50–64	18	48
Ages 65+	3	13
<$30,000	23	52
$30K–$50K	34	64
$50K–$75K	35	67
$75,000+	42	80
Urban	33	61
Suburban	31	58
Rural	22	47

*2006 figure is for English-speaking Latinos; 2011 figure is for English and Spanish speaking.
Source: Pew Internet & American Life Project surveys.

The data about teens are the most compelling, as table 4.2 shows. When asked about the ways in which they communicate with friends outside school on a daily basis: 54 percent of all those ages twelve to seventeen say they used texting on a daily basis; 38 percent use mobile voice contact daily; 33 percent say face-to-face meetings outside school daily; 30 percent report talking on a landline telephone daily; 25 percent use daily contact through social network sites like Facebook; 24 percent use instant messaging. By contrast to longstanding patterns, email is the least used communication activity, with only 11 percent reporting that they use it on a daily basis.

Teens prefer mobile texting and talking because they can do it privately from their personal phones, and because texting is unobtrusive—it can be done silently while in a class, out with friends, or even at home with parents. Unlike phone chats, texting can be asynchronous: Busy teens can leave messages for each other. More than any other age group, teens need to be both individualists and networked. They want to forge their own

identities independently from their parents. Yet, they have real social, instrumental, and nurturance needs for connections to their peers—and also to their parents.

Teens and young adults also use their mobile phones to micro-coordinate their lives. Information scientist Rhonda McEwen found that Toronto undergraduates do not use landlines to call close friends even if it is available. Although three-quarters of those surveyed had access to a landline, four-fifths of them would still call a mobile number even if they knew the recipient was within range of a landline. Yet Toronto teens perform an ambivalent approach-avoidance duet when they meet others. They immediately exchange mobile phone numbers, but they implicitly understand that neither will call the other until the relationship becomes more serious. In general, teens see the mobile phone as an instrument of intimacy. They use Facebook and instant messaging for more distant or newer relationships.[19]

Beyond Talking and Texting: The Smartphone

The evolution of the mobile phone hasn't stopped with texting. In the mid- to late 2000s, there was a convergence of improvements in computing, storage, and radio-spectrum management that made mobile connectivity easier and cheaper. Phones themselves became more versatile as cameras were added and apps were developed. These turned the former two-pound "mobile" calling device into a light, compact multifunctional Swiss Army–style tool, able to communicate, browse, create, and amuse—and to be in touch with social networks in an instant (table 4.3). The social-sharing functions were becoming particularly

Table 4.3
Percentage of Mobile Users Who Use Their Phones for These Activities

	2007	2009	2010	2011
Take picture			76	85
Texting	58	68	72	85
Access internet	19	32	38	51
Record video	18	19	34	40
Play music	17	29	34	39
Email	19	29	34	44
Play game	27	27	34	41

Source: Pew Internet & American Life Project surveys.

important to mobile phone users by mid-2011 as they sent photos and videos to others (74 percent) or posted them online (31 percent), accessed social networking sites (48 percent) and Twitter or other status-updating sites (20 percent), and even made charitable contributions via text (10 percent).

This expanding functionality makes mobile phones useful in new ways. In Toronto, disgruntled transit riders have made a habit of photographing sleeping station agents and bus drivers taking coffee breaks. They actively share their photos with newspapers to force more customer-oriented service. In response, the transit operators set up a counter-Facebook site, "Toronto Transit Operators against Public Harassment," where they post pictures of obnoxious riders.[20]

There is another story to tell in the emergence of mobile apps, first widely introduced by the iPhone but now being built by the many thousands to serve a growing number of smartphones with customized information, games, and other activities. "If the cell phone kept us connected to each other, then the smartphone kept us connected to the world," muses *eWeek* editor Debra Donston. Easy-to-use apps are leading to vastly increased and diversified mobile phone use.[21] The first *Pew Internet* survey on the subject in the spring of 2010 showed that 35 percent of all U.S. adults—or 43 percent of mobile phone owners—have apps on their phones. Supporting data from the Nielsen Mobile Insights group looked at the subpopulation of those who had downloaded an app in a month. The most popular apps are games (especially puzzle/strategy games, card games, and arcade games), social media websites, maps and directions, and weather reports.[22]

Yet, for all the developers' media excitement about the apps, many mobile users are not fully plugged into this world: The Pew Internet survey found that 11 percent of mobile owners do not know if they have apps on their phone; only 24 percent of Americans actually use the apps on their phones (even though 35 percent say they have apps on their phones); and 18 percent of those who have apps do not know how many apps they have on their phones.

That situation will, of course, change as people become familiar with all the capabilities that are being built into smartphones. Indeed, it was not farfetched for *PC World* writer Jeff Bergolucci to write that multifunctional smartphones will likely eventually kill off several major stand-alone consumer technologies: MP3 music players like iPods, portable game consoles; point-and-shoot cameras; personal video players; voice recorders; portable GPS navigation devices; personal digital assistants; wristwatches;

paper maps; and 411 directory assistance services.[23] The rise of smartphones and the surrounding apps ecology has prompted spirited debate about whether non-web exchanges that run on the internet but not on the web—such as mobile apps, peer-to-peer services, video exchanges, and downloads—would supplant web applications as the dominant form of media and communication exchanges. *Wired* magazine kicked off the debate with a provocative cover story, "The Web is Dead. Long Live the Internet," laying out a credible scenario where people turn away from the sprawling, browser-based, search-oriented web in their search and content-creation activities toward the more customized world of non-web, mobile apps. The argument about the validity of its thesis rages on through this writing.[24]

Computers Have Become Mobile and Wireless

Do a stimulus-response test: Ask people what their personal computers are for, and they will usually say "the internet." That's not always been so. It's only in the past fifteen years that computer use has become synonymous with internet use. When the Pew Research Center for The People & The Press did its first internet-related survey in 1996, only 19 percent of computer users were also internet users. Most used their computers for stand-alone programs: word processing and spreadsheets. Yet, by the spring of 2011, 98 percent of computer users were internet users. In effect, the internet had become the computer.[25]

Even now, many personal computers are tethered to the internet via cables: reliable and secure. Yet wireless connectivity is now something a majority of Americans enjoy. When the Pew Internet project adds up the number of laptop owners who connect through a wireless card—88 percent of laptop owners—and the number of smartphone owners who connect with their mobile handhelds, the project finds that 63 percent of all Americans are wireless connectors, as of mid-2011. Wireless access has allowed the internet to travel with users, so much so that many Americans use multiple devices to connect to the internet. For instance, 32 percent of Americans said in a mid-2011 Pew Internet survey that they have gone online wirelessly using both their mobile phones and their laptops. Some of coauthor Wellman's students sit with both a laptop and a smartphone at their seats: one to take notes and the other to chat with their friends.

This greater use of mobile connectivity has also encouraged greater internet use. Wireless users are substantially more likely than those who

only have broadband landlines to do more internet activities. Among other things, Pew Internet surveys have shown that mobile connectors are 41 percent more likely to be online news consumers than those who only have fixed, wired broadband connections; 64 percent more likely to have done online banking; and 92 percent more likely to have made a charitable donation online.[26]

Living in the Cloud

People can do some things by themselves with a portable computer. Just as in the old days, they can write a document or analyze spreadsheets. And with minimal internet access, they can send emails and instant messages or browse the web. But to do anything more heavy duty, they need access to software and materials that are stored online, in the "cloud." Cloud computing applications became popular in the early 2000s. Still, it wasn't until MySpace and Facebook took off that people started living in the cloud—often without realizing it. The general technology to "push" to people the digital material they might like had existed for many years, but the "killer app" for that function did not arise until social networking sites made this push compelling by allowing it to help users answer the question: "What are my friends doing now?" At the same time, cloud functions have become more compelling with the rise of mobile connectivity because they enable people to have access to their files and business applications wherever they can grab a connected device—or pull out one from their bag. And they can work together, using a shared password to coedit a document or edit an online calendar showing when they are available.

Using the cloud has its risks: Cloud-service companies may disappear; the internet connection can go down; surveillance is easier; cracking (the odious form of hacking) and identity- and data-theft can be more devastating. For example, Gmail has gone down at critical moments for some users. In October 2009, the wireless phone company T-Mobile wrote to its customers that "personal information stored on your [mobile] device—such as contacts, calendar entries, to-do lists or photos—that is no longer on your Sidekick almost certainly has been lost as a result of a server failure at Microsoft/Danger." Microsoft Danger's servers had crashed days before without backup copies of users' items. Another privacy invasion occurred when hackers took over Twitter on December 17, 2009, replacing its content with: "THIS SITE HAS BEEN HACKED BY IRANIAN CYBER ARMY iRANiAN.CYBER.ARMY@GMAIL.COM."[27]

Continuous Access and Hyperconnectivity

The Mobile Revolution has extended the cultural changes that were already underway as the Social Network and Internet Revolutions took hold. A large number of people have emerged who are almost always online or on their mobile phones: available to others, capable of searching for information, and usually able to create online material if they wish. They have built continuous access into their lifestyles and expectations. Additionally, their access nudges them into an internet-first frame of mind, encouraging them to use their smartphones, laptops, or desktops to access the internet when they have a question to research or something to publish—a status update, a picture, a video. This level of connectedness also leads them to prefer to text and chat on mobile phones as they share their stories.

The small size of mobile phones also gives users a sense that their social networks are easily accessible wherever they are: The diminutive device potently symbolizes a network in their pocket. Some 84 percent of cell-owning teens say in a Pew Internet survey that they take their phones to bed with them to make sure they are aware of messages and status updates throughout the night. Others confess that their phone is part of their body. As sociologist Manuel Castells argues: "We now have a wireless skin overlaid on the practices of our lives, so that we are in ourselves and in our networks at the same time. We never quit the networks, and the networks never quit us; this is the real coming of age of the networked society. . . . People can now build their own information systems."[28]

This easy and constant accessibility changes how people relate. For networked individuals, this switch to perpetual access that is untethered from places gives them more control of their outreach to others and their availability to others. This also affects people's sense of time, place, presence, and social connectedness. This, in turn, leads to new notions about when it is possible—and permissible—to be in touch with others. People's expectations about the availability and findability of others have sharply expanded since the Mobile Revolution began. In one poignant example, researchers Scott Campbell and Michael Kelley have shown how alcoholics and their mentors are always on call to each other for moral support and expertise.[29]

For better or worse, mobile hyperconnectivity means that people do not have to walk—or sit—alone. They are *networked* individuals. At times, people use their mobile phones to communicate to onlookers

that they have friends and that they are not lonely losers. They may physically be alone, but they are not socially lonely. At times, they even fake it. Some 13 percent of U.S. adult cell owners say they have pretended to be using their phone in order to avoid interacting with other people around them.[30] Others have pretended to be on their phone when they feel endangered and want to ward off trouble. Moreover, as people use their mobile phones to reduce loneliness or kill boredom (as 42 percent of U.S. adults have), they reinforce their existing relationships. This intensification creates a cocoon-like zone of intimacy in which people can continuously maintain their relationships with others who they have already encountered. Thus, mobile phones both liberate and reassure.

Controlling the Volume and Social Interactions

The reality of perpetual connectivity is well suited to networked individuals because it greatly increases their opportunities to network. But what about what sociologists call "work-life balance"? Language scholar Naomi Barron notes that mobile communication—combined with caller ID, voicemail, away messages, and other technologies—allows people to "control the volume" in their social lives. They can turn their phone on and off, screen their calls, or manage others' expectations about their availability. Yet, the same power that they have to regulate the access others have to them means that they need to work harder to gain access to others.

The expectation and reality of perpetual access also creates stresses. Jeremiah, a tech-sector worker interviewed by Pew Internet (who only wanted us to use his first name) described his evolution as a manager of his social relationships. When he first bought a mobile phone in 1997, he was "on on on all the time, and it didn't matter who I bothered or who called me at any hour." He says it was intoxicating to be plugged into his social and work environments "365/52/7/24/1440"—every minute of every day of the year. Then, as more of his colleagues got mobile phones, the number of calls began to rise, and the number of overlapping or back-to-back-to-back interruptions started growing. He recalls: "I finally lost it sometime in 2000 when I got a middle-of-the-night call [in San Francisco] from someone in Asia and I started screaming, 'Don't you know what time it is here?' and the guy replied, 'I thought you were close to my time zone in Singapore.' I realized he didn't know where I was and didn't particularly care."

From that point onward, Jeremiah began to regulate his accessibility. First, he started using email "away" messages to inform others when he was focusing on particular tasks and to reduce the pressure he felt to respond quickly to all emails—both work and personal. After that, he likewise used away messages on his mobile phone to let callers know what he was doing and when he would be able to receive and respond to voicemail messages. He also created several email accounts to share with close friends and colleagues to allow them different pathways to him that he monitored more frequently. "In the beginning, some of my friends were insulted that I was actually daring to limit their access to me," he explains. "Over time, though, I think they began to face the same time-management hassles and adopted my self-defense techniques. They definitely stopped bitching to me about my strategies to get a little more control over my time."

When Facebook opened up to the general public in 2006, Jeremiah created a profile that was designed to be a "public address system" about his whereabouts and availability. He says that by posting status updates regularly on Facebook, he could announce his "office hours and office-closed" notices to a wide range of friends. Most honored his wishes, especially since he made it clear to his closest pals and most important clients that he was available at all hours in urgent situations.

Jeremiah has seen those around him take even more dramatic steps to try to manage outside contacts. More than a dozen friends have declared "email bankruptcy" by saying they have given up any hope of responding to the hundreds of unanswered emails in their inboxes. Some have started over. One has said he will read select emails in the future, but hardly ever respond. Several have quietly let select acquaintances know that the way to start a conversation is via texting or IM-ing (instant messaging). Jeremiah writes: "Challenges over personal access are universal in my business. We've really gone from the anytime, anywhere ethic to one where you have go through protocols and permissions to get to deal with someone. The access gates have slammed shut." A *New Yorker* cartoon nicely sums up the situation, with one man saying to another, "I used to call people, then I got into emailing, then texting, and now I just ignore everyone."[31]

At the same time, others are organizing their communications based on the context of their contact. People use multiple media to communicate and can choose the one that is most suitable for the moment. If they don't know where the other person is, their first questions usually are: "Where are you? Are you OK to talk? Is there anyone with you?" Discreet text

messages are handy: Torontonian Julia Madej exchanges romantic texts with her husband Luke "about 50 times a day."

Ad Hoc Communities Using Mobile Communication

Ad hoc communities are created in an instant, thanks to mobile communications. Technology analyst Howard Rheingold gave birth to the idea that "smart mobs" are a hallmark of this new age.[32] Groups no longer require centralized decision making and top-down information flows to gather information that allows group members to act in a coordinated fashion. This information is now distributed and conveyed by group members contacting each other when they have the urge. The nature of such ad hoc community is well illustrated by an episode communications scholar Rich Ling recounted, about when he came to the aid of a woman who had just fallen and hurt herself:

A woman fell on a stairway and hurt her leg when she was rushing to get her groceries into her apartment while her two-year-old son was asleep in the back seat of the car. Aside from a banged-up leg and the resulting shock, the woman was not otherwise hurt. To confirm this, however, she needed to go to the emergency room. In addition, her son needed to be cared for. Thus, there were a whole series of communications to be made.

When lying on the stairs, before other[s] had even recognized that there was a minor emergency afoot, the woman had incidentally received a call from a friend who had rung for a chat. After being alerted to the situation, this friend was on her way to the apartment but was still a half hour away. After this call I chanced by and was drawn into the situation. I helped her to a more comfortable position, she was able to call another family member to come and help with taking care of her son. This family member was en route to another location at the time, but it was arranged that he could come and get the child. Although it would take approximately an hour. A short-term babysitter was found—my daughter. In addition, another friend was alerted and he was able to meet the woman at the emergency room after he had retrieved his own child from day-care. Finally, a call was made to my wife in order to postpone my picking her up from a shopping trip.[33]

Ling was struck by the efficiency of all the interaction. People were alerted and activities were rearranged on the fly in real time. "Underlying all of this was the assumption that each relevant person had a mobile phone and was accessible via that form of mediation," he wrote. "This assumption has become a part of the logic of a real-time form of coordination." Chapter 8, "Networked Creators," goes into more detail about the power

and impact of such networked interaction in more global and civic activities.[34]

The New Choreography of Physical Gatherings

Before the mobile-ization of the world, time and space were critical factors for in-person contact. People needed to specify when and where they would meet. Coordinating a rendezvous, a party or a business meeting was a formal negotiation yielding firm coordinates. Early in the twentieth century, sociologist Georg Simmel pointed out that a similar, large-scale change occurred with the nineteenth century's Industrial Revolution. With the coming of big machines, cities, bureaucracies, stores, and railroad lines running on strict timetables, people had to be at precise places at precise times—or else the machines wouldn't be operated, papers wouldn't be pushed, customers wouldn't be served, and trains wouldn't be boarded. Public clocks—and private wristwatches—regulated the industrialized world. This was a profound change from preindustrial village life, where people went to their farms, shops, or pubs according to their needs—not their clocks.[35]

To some extent, mobile phones allow us a slight return to this more casual negotiation of time. In the age of mobile connectivity, time is more fluid and people's expectations have changed. In the felicitous phrase Ling uses, "hyper-coordination" is now possible and preferred, especially by younger mobile users.

Within a decade, we have come to take mobile connectivity for granted. When you read "Interlude: A Day in a Connected Life," following this chapter, notice how much back-and-forth goes into Maya's getting together with her friend Geri. Rather than people stating precisely where they will be and when, people use their mobile phones as they draw near a gathering, repeatedly reporting their whereabouts and approximate arrival time, and often pointing out landmarks so that those meeting them will be able to place them and even see them as they approach. They understand from the beginning that the initial time and place for the meeting are approximate and changeable. They are more careless about arriving at the proper time and they fuss less about knowing the proper place ahead of time. Sociologist Bernie Hogan calls this "soft time" and "soft location." It is part of networked individuals' shift from place-based connections to person-based connections, with "a flexible lifestyle of instant exchange and constant updates."[36]

Longer Encounters

In the era of perpetual connectivity enabled by mobile communication, social encounters can be prolonged and elaborated. Pew Internet respondent Maxine Clarke gave a good example of this:

Every time I leave someone, I remember things I wanted to say or I have reactions to our discussion that I want to make sure I register. Before I had a cell phone, I would have just let them pass or I would have brought them up the next time I saw the person or had a [landline] call with her. After I got a cell phone three years ago, I realized I could just ring the person right back and we could pick up just where we left off. Sometimes I'll just call someone I've just seen just to say, "That was fun, let's do it again." This is a more spontaneous and human way to be in touch with others. I don't have to make an effort to reach out. I can do it on the spur of the moment.

Information scientist Rhonda McEwen noticed a ritual when Toronto students get together. A mobile call or text message preceded the in-person meeting by a few minutes, and a second call followed after the friends departed. "McEwen reports that first it's: 'I'm just calling to make sure we're on for today' or 'remind me to tell you about whatever.'" The students then recount: "We meet, then afterwards, 'Hey thanks very much for today; that was great.' It's more of a cell phone thing. I'd say I'm more prone to call before, meet and text after, that's sort of my habit."

This ritual sandwiching of mobile chat with the meeting stretches the interaction beyond the physical meeting. The pre-meeting call lowers interaction barriers before the in-person meeting because the participants have something very recent to reference. The call afterward politely ensures that the interaction lingers on via the mobile phone. One student described the pre-meeting call "an appetizer before the main course" and the post-meeting call "the dessert."

The Weakening—But Not the Death—of Distance

Ages ago in internet time—1997—*Economist* writer Frances Cairncross published a book provocatively titled: *The Death of Distance: How the Communications Revolution Is Changing Our Lives*. Her thesis: "New communications technologies are rapidly obliterating distance as a relevant factor in how people conduct their business and personal lives."[37]

More than a decade later, we can see that Cairncross was both right and wrong. Our book presents many examples of people connecting over great distances: at work, in friendship, and even in families. Distance no longer

means that communication has (almost) died. For some things, such as online games, distance does not even matter—except when collaborating players get out of sync because they are sleeping in different time zones. For some things, time-zone differences are even beneficial, as when medical secretaries in India enter American doctors' notes during the American nighttime and the Indian daytime.

With communication being personal and mobile, location often is not apparent. Mobile connections can become "places." In some circumstances, people can become more defined by their mobile phone numbers and internet aliases than by where they physically live and work. When graduate student Kris Thomas went to Addis Ababa in 2008 to deliver food to an orphanage, many people gave their mobile phone number as their "address":

We asked our driver for his address, so we could hire him again. He said, "sure, sure," and he took our pen and paper, wrote something and handed it back. It was a cell number, complete with the international calling code prefix. His address was a phone number. That is why so many residents had cell phones. Their place is not tied to a home, an address, a permanent place on earth, but to their phone number. "I am here," but "here" is where you can reach me, via my phone. Our driver couldn't give us any addresses where he could receive mail—neither his home address nor the orphanage's. He seemed surprised that we would want such a thing—why would we need it, when we had his phone number? I got the sense in Addis that maybe the socio-economic divide is not "have a home versus homeless/ shanty living" but instead perhaps "have a phone number and therefore a place, versus do not have a cell phone, truly without a place."[38]

Nor is this only a phenomenon of the developing world. Oxford sociologist Bernie Hogan tweeted on February 4, 2010: "A friend asks for my address & phone. I give him email & cell. It never dawned on me that he meant 'home' address."

Yet, distance still matters in many situations. We show several times in this book that the closer that people live and work to one another, the more contact they have.[39] Moreover, the emergence of location-aware software means that place remains important as long as we think of place in the way that networked individuals do: as the locations where they are at that moment, and where they are heading.

Connected Presence, Absent Presence, and Present Absence

People can initiate multiple social contacts and information searches so rapidly that time is basically "timeless"—what communications scholar

Manuel Castells calls "the space of flows."[40] This is a realm where multiple near-simultaneous communications are possible and can be consummated at any moment—including times when people are standing in line, walking down the street, or driving in their cars. Time sequences need no longer be as distinct as they were when parts of the day had different characteristics: Waking up was followed by breakfast, traveling to a job, work time, lunch break, traveling home, dinner, and evening leisure time. Unplanned traffic jams and waits in doctors' offices are especially empty. Mobile devices can now fill these heretofore useless waiting times with all manner of activity enabled by mobile devices—and the sanctity and separateness of different times of day can easily be interrupted. Mobile networked individuals have more room to maneuver and more opportunities for interaction. Even when not physically together, they have what communication scientists Scott Campbell and Yong Jin Park call a "connected presence."[41] For instance, people can update their friends on aspects of their lives without having to wait for the next time they see each other in person. There is less backlog of information.

One caution is that intensive ICT use means that people can be physically in one place while their social attention and communication focus is elsewhere—a state that social psychologist Kenneth Gergen calls "absent presence."[42] This can create awkward, annoying social discontinuities as people "leave" the group they are physically a part of to take a call or respond to a text message from someone afar. "Distracted driving" has become a policy concern, with states and provinces outlawing holding a mobile phone while driving. Pew Internet surveys have found that 47 percent of U.S. adult texters and 34 percent of texters aged sixteen to seventeen (of driving age) have sent or received texts while driving. Some 49 percent of all adults and 48 percent of all teenagers have been passengers when the driver was sending or reading texts. Finally, 44 percent of adults and 40 percent of teens said they were passengers in cars when the driver put them in danger because of the driver's use of a mobile phone. The plaintive cry of those ignored or abandoned by their "absent present" companions was sounded by Pew respondent Michael Jamison:

I've had a number of arguments with my family about how much I feel disrespected when they check their text messages or crackberries [BlackBerrys] when they are with me. They understand how I feel now and have (mostly) stopped doing it. I worry about my son in college because he and his friends don't seem to ever be totally present in their live interactions with each other. They are all constantly texting others instead of fully engaging in conversation with the people they are

with. A key aspect of true friendship is that friends will really listen to each other. I don't know how you can do that if you are texting others at the same time.[43]

Scattered studies suggest problems. For example, distracted drivers do not need to be holding mobile phones to have higher accident rates—it is the act of talking on the phone that is the issue. While walking, mobile phone users are more likely to ignore key things happening around them. Pew Internet found that 17 percent of mobile owners had bumped into another person or object when they were distracted by talking or texting on their phones.[44] In one experiment, more than half of participants did not notice a clown unicycling nearby.[45] Two-thirds of employees want to ban smartphone use at meetings as distracting and impolite. And one women wrote to advice columnist "Dear Abby" complaining about others chatting on mobiles while using public toilets.[46]

The array of both positive and negative feelings that people have about the role of mobile phones was nicely captured in the words of an anonymous Pew Internet respondent in April 2009:

My husband has a heart condition. Last fall he had an episode and ended up in an ER about 45 miles away. I had my phone turned to privacy because I was in a meeting, but after I heard it vibrate for the third time in about ten minutes I knew I should answer it, so I was able to get to my husband on a timely basis instead of finding out after I got home. Yet, my husband's cell phone bugs the hell out of me! He always raises his voice, never wants to let it go to voice mail, and always has it in his pocket. He stops everything to answer his phone, while I do not.

Norms, expectations, and habituation are part of the issue, for people have multitasked while driving for generations. Moreover, Europeans often sit among friends at cafés while simultaneously using their mobile phones to incorporate absent friends into their group conversations. To complement Gergen's notion of "absent presence," we call this "present absence."

The Blurring Boundaries of Public and Private Spaces

The boundaries that used to exist between public realms and private havens are no longer as rigid. People now engage in intimate mobile phone conversations as they stand on sidewalks. Work supervisors now have more ability to interrupt family gatherings. The private is more likely to become public. Several Pew Internet respondents discussed situations where they had confronted individuals who were inflicting their private lives on others in public places. Nikki Waters described how she and several other passengers listened to a woman curse out her boyfriend for several minutes

on a BART train and then confronted her with the blunt request: "Lower your voice and move on." Even more revealing about how private matters have colonized public spaces in the age of mobile phones is this story a lawyer recounted about an overheard conversation on a train from Washington, DC to New York City:

I, along with all of the other passengers, were sitting quietly when the man directly behind me decided to make a phone call using his Bluetooth [wireless ear piece link to his mobile phone]. He was talking so loudly that I think most people in the car were able to hear him. His conversation, though he stressed how necessary it was to be kept secret (ah, the irony), detailed the current plans of Pillsbury [Pillsbury Winthrop Shaw Pittman law firm] to lay off somewhere in the range of 15–20 attorneys from four offices by the end of March, including a few senior associates with low billable hours and two or three first-year associates. I wouldn't have believed it except for the fact that he identified himself to the caller as Bob Robbins, who I learned is the leader of the firm's Corporate & Securities practice section, and that he was talking to Rick Donaldson, who I learned was COO (chief operating office). What's more, he was NAMING NAMES over the phone![47]

While some people do not notice—or care—that they are in public, others are taking steps to preserve some privacy in public spaces. Sociologist Keith Hampton and associates watched people using wireless laptops and mobile phones in public places, such as parks, and semipublic places, such as coffee shops. Some users maintained open glances while they looked at their laptops and mobile phones, inviting conversations; others surrounded themselves with laptops, books, and outerwear as visible barriers to interaction. In figure 4.4, Nelu Handa smiles happily at Ezra's Pound café in Toronto while surrounded by her wireless laptop, two mobile phones ("one is for friends, and the BlackBerry is for business"), an iPod music player (attached to her earbuds), a cup of coffee, a camera, eyeglasses as an aid to visual communication, and anachronistically, a large notebook for writing ideas. Although surrounded by tech gear, she was quite happy to chat with other diners.

Mobile hyperconnectivity in fuzzily bounded public-private space changes individuals' expectations about the availability of other people and the accessibility of information. As personal autonomy grows with new tools, there is a counterpressure for people to stay connected. This is partly driven by *social striving*: Who wants to be out of the loop? A new formulation of that concern in tech circles is "FOMO"—Fear of Missing Out. In addition, the imperative to connect is partly driven by *social needs*: Who wants to miss a call from someone who might offer something useful? It is also partly driven by *social obligation*: Who wants to get a reputation as being a wallflower?
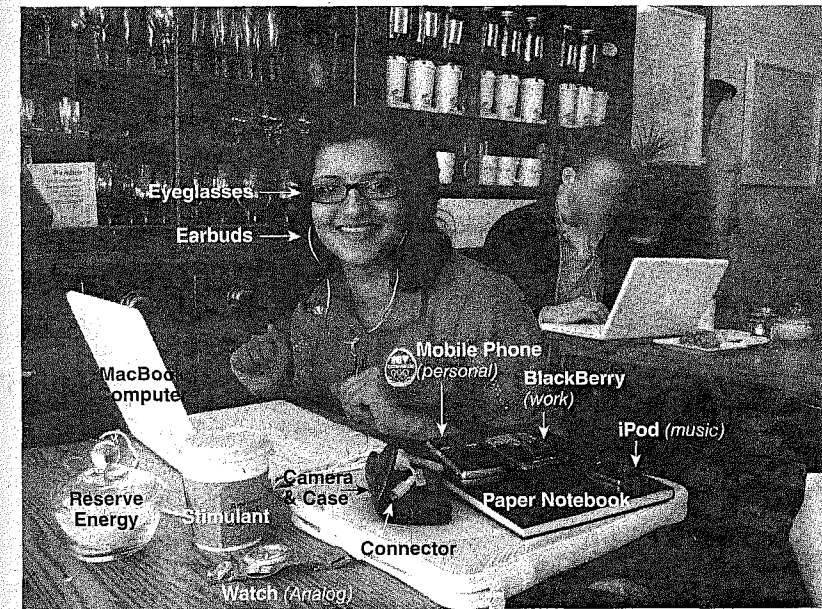

Figure 4.4
Nelu Handa at work at Ezra's Pound Café, Toronto, May 2009.
Source: Barry Wellman. © 2009, used with permission.

The old rules of etiquette and courtesy are reconfiguring in this new environment that enables users to conduct their private business in public places. Evolving mobile etiquette—"metiquette"—injects new realities into social events. When, if ever, is it permissible to interrupt a conversation to accept a mobile call or a text message? When, if ever, is it okay to check email on a mobile device while a meeting is taking place? When, if ever, is it permissible to browse a social network site when a teacher is giving a lecture? When, if ever, can you scream your dismay into the phone while you are waiting in line for the bus? The norms of networked individualism have not caught up to the practice of networked individualism.

The rebalancing of public and private means renegotiating the norms of absent presence. Many people expect to get undivided attention when talking in person. Yet, some of coauthor Wellman's students think it is okay to text while meeting friends in person. They think it rude to have extended phone chats, but a murmured quick call to arrange something is okay. Sociologist Erving Goffman has pointed out that people must practice "civil inattention" in order to get through life in public spaces.[48] As Crocodile Dundee did not realize when he moved from the Australian
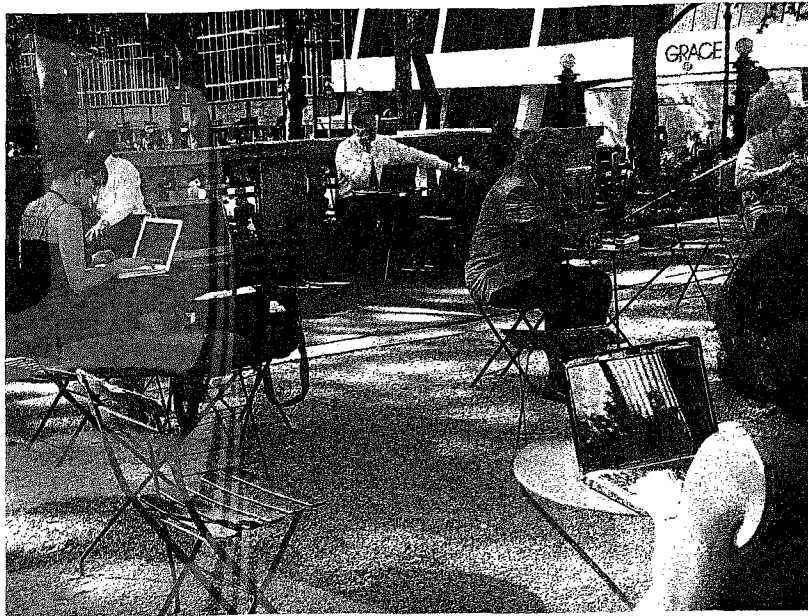
Figure 4.5
Laptop users in Bryant Park, Midtown Manhattan, June 21, 2010.
Source: Oren Livio; © Keith N. Hampton 2010, used with permission.

Outback to New York City, big-city people would get overloaded if they paid attention to everything. But what if people are thrusting heretofore private matters into our faces and ears: talking loudly on phones in public or texting incessantly? Look in the second picture (figure 4.5) at how a number of networked individuals mark off private space in the midst of a crowded New York park. Each is alone, but each is connected to an outside world.

As with earlier technologies, societies are still adjusting to what is acceptable behavior while using mobile devices. When someone reaches for her mobile phone during a lunchtime meal to check in with her spouse or colleague, people may not make the snide comment that they would have a few years ago nor may they feel as offended by the action as they would have not long ago. When a mobile phone rings during the toasts at a wedding, some people chuckle and shake their heads, while others glare. Yet, a YouTube video records the gasps at the church when "Louchester" pulled out his BlackBerry at the altar to change his Facebook status to "married."[49]

The Triple Revolution Pushes on: Mobile + Internet + Social Networks

Most North Americans use mobile phones. But the extent to which they are in perpetual contact varies. Many are motivated by mobility to deepen their relationship with digital resources; many are in a holding pattern. Some in the holding pattern are becoming more involved, some will remain steady users, and some are not likely to become more active.

One implication is that there is an *inflection point* that comes when North Americans go beyond using their mobile phones only for talking, chatting, and snapping—and start using their mobile devices to access the internet. This is when the value and impact of mobile connectivity will become most pronounced. Indeed, people now report a growing reliance on mobile devices. For example, Pew Internet found that the mobile phone went from the device that was the fourth "hardest to do without" in 2002 to the number one slot by 2007.[50]

Through developments such as these, mobile connectivity has increased the ability of people to act as networked individuals by giving them more control over how they can reach out to others for information and support, share ideas, create personal networks around similar interests even if the network members live far apart, and switch between portions of their networks. In the process, mobile connectivity has lessened individuals' perceptions of themselves as embedded members of fixed groups.

Mobile connectivity is a social lubricant. The global uptake of the mobile phone is probably the most rapid embrace of a consumer technology in history. Important in itself, it has come together with four other developments to enable widespread mobile connectivity that have profoundly affected behavior: (1) the emergence of lightweight portable computers: laptops, even smaller netbooks and tablets, and smartphones; (2) the rise of wireless connections so that people can connect to the internet wherever they can get a broadband phone or computer signal; (3) the emergence of cloud computing that enables people to store email, documents, and media, and to use social media on remote servers that are accessible from any connected device; and (4) the boom in apps that have turned smartphones into diversified personal and portable computing devices that can access the internet.

We close part I of our book with the hope that we have made clear that the three revolutions intertwine and affect each other in the network operating system. The Mobile and Internet Revolutions are not either/or: They reinforce each another. The always-connected layer of mobile access has enhanced the ascent of broadband and the always-on internet. The

way those motivated by mobility use both their wired and wireless access suggests a new era for many users, where the norm is continual access to information and communication. Indeed, as the internet and mobile access converge, we are finding some networked individuals whose smartphones and highly portable computers satisfy all of their needs.

The implications of a significant portion of the population being involved in continual access are only partially understood. Space and time are becoming softer, with people finding their way to each other in due course—to socialize, work, or organize. Location is becoming important— but now mobile apps find people wherever they are. As always, distance is not dead, it is just being renegotiated. Physical presence and absent presence are becoming integrated as the character of public and private spaces changes. We are seeing people spending more time away from their home and office desktops and more time with their mobile appliances. The internet is becoming the mobile internet. Your place is where your connectivity is.

Networked individuals are using both the internet and mobile access to orient their "continuous partial attention" to a variety of social networks and information sources.[51] This mobile-ization strengthens the three pillars of online engagement: connecting with others, satisfying information queries, and sharing content with others. In part II, we describe in more detail how important realms of human activity are being shaped by the Triple Revolution and how networked individualism is playing out in relationships, families, workplaces, and creative and knowledge spaces.

5   Networked Relationships

Alarm spread in June 2006 when Miller McPherson, Lynn Smith-Lovin, and Mathew Brashears published "Social Isolation in America" in the *American Sociological Review*.[1] In this leading journal, the three scholars reported findings from the General Social Survey—the gold standard of American surveys—to the question: "Looking back over the last six months—who are the people with whom you discussed matters important to you?" Comparing Americans' answers in 2005 to answers in 1984, they found that the number of people with whom Americans reported discussing important matters had declined by 28 percent, from 2.9 to 2.1. Moreover, nearly one-quarter (23 percent) of Americans said they did not have any confidants with whom they could discuss important matters—not even their spouses. The nature of their confidants had also changed. There were fewer friends and neighbors in 2005 than in 1984 and more immediate kin and spouses. For example, the percentage of Americans with a friend as a confidant declined from three-quarters (73 percent) in 1984 to one-half (51 percent) in 2005.[2]

These depressing results raised an alarm that Americans had become more isolated. Although the researchers did not show that the internet was the cause of social isolation, the media speculated about this. *Toronto Globe and Mail* columnist Douglas Cornish sounded a common refrain when he wondered: "Will this glow [from the internet] produce a closed generation of socially challenged individuals, humans who are more comfortable with machines than anything else?"[3]

Anxieties about the withering of relationships are not new, but began many centuries before the coming of the internet. Every epoch experiences them. In past decades, they were tied to industrialization, bureaucratization, urbanization, socialism, and capitalism. Often, these alarms have been tied to the rise of technologies that connect people in new ways: from grumbling about nineteenth-century railroads spooking horses to

more recent complaints about cars and telephones isolating people from in-person contact.[4]

The alarm is repetitive: Something is happening "now" to rend apart the supposedly supportive, fulfilling bonds of olden days—although in every generation the alarmists keep looking back approvingly to the previous generation. For example, in the now supposedly communal 1950s and 1960s, commentators were moaning that things were falling apart compared with the old days. They came up with a number of memes for it, such as "the lonely crowd," "mass society," and "the quest for community."[5] For example, here is Maurice Stein in *The Eclipse of Community*: "The old feeling of solidarity based on a sense that everyone in town belongs to common community gives way to sub-communities with hostile attitudes toward each other." He continues: "Community ties become increasingly dispensable, finally extending even into the nuclear family, and we are forced to watch children dispensing with their parents at an even earlier age in suburbia."[6]

Although such critics wrote before the proliferation of the internet, it has now became the scapegoat. The basic argument is that community is falling apart because internet use has led people to lose contact with authentic in-person relationships as they become ensnared online in weak simulacra of reality. As early as 1995, Texas radio commentator Jim Hightower warned, "While all this razzle-dazzle connects us electronically, it disconnects us from each other, having us 'interfacing' more with computers and TV screens than looking in the face of our fellow human beings."[7]

Social psychologist Robert Kraut and associates added to the unease in 1998 when major newspapers publicized his finding that newcomers to computing had decreased social involvement and psychological well-being. To their credit, Kraut and associates retracted their initial findings in 2002, when they found that as the newcomers became computing veterans, their negative symptoms disappeared. However, this got less media attention.[8]

The internet was also the force underlying social decay in William Gibson's science fiction novel *Neuromancer*, which portrayed people losing their real-world personas by "jacking in" to "cyberspace" (the latter being a word that Gibson coined for the novel).[9] More recently, social scientist Sherry Turkle has argued that people create separate selves as they immerse themselves in cyberspace and forget the real world. "People can get lost in virtual worlds," she warned in her 1996 *Wired* magazine article. Her 2011 book *Alone Together* continues the thread, bringing in a new techno-fear as added cause for alarm: connections with robots supplanting human

interaction.[10] She also raised concerns about people being more preoccupied with the connections they make through mobile phones than with the real people who are standing mere inches away.

After the McPherson, Smith-Lovin, and Brashears article and ensuing commentary about technology's suspected baleful impact, network scholar Keith Hampton joined with Pew Internet to investigate how technology might be tied to social isolation and declining discussion networks. The resulting work showed the opposite: People who use ICTs (information and communication technologies) have larger and more diverse networks than others.[11] On average, a Pew Internet study showed, the size of people's discussion networks—those with whom they discuss important matters—is 12 percent larger among mobile phone users, 9 percent larger for individuals who share photos online, and 9 percent bigger for those who use instant messaging. The diversity of people's core networks—their closest and most significant confidants—tends to be 25 percent larger for mobile phone users, 15 percent larger for occasional internet users, and even larger for frequent internet users.

Contrary to some pundits' fears that the internet was drawing people away from local communities, Pew Internet research found that most internet activities have little relationship or a positive one to local activity. For instance, internet users are as likely as anyone else to visit with their neighbors in person. Mobile phone users, those who use the internet frequently at work, and bloggers are more likely to belong to a local volunteer association, such as a youth group or a charitable organization. Internet use does not pull people away from public places, but rather is associated with frequent visits to places such as parks, cafés, and restaurants—the kinds of locales where people are likely to encounter a wider array of people and diverse points of view.

Why do many commentators suspect that ICTs cause social woes? There are multiple traps in the notion that the internet is a separate, immersive medium:

• It assumes that people lead different "virtual" lives, distinct from their everyday real-world lives. As we showed in part I, this rarely is the case. With the partial exception of the intense gamers that Turkle has studied, online and in-person interactions—and lives—are intertwined.
• It assumes that in-person encounters are the only meaningful form of social connection, and it does not recognize that emails, text messages, Facebook posts, tweets, and the like are everyday tools that people routinely use to stay connected.

• It asserts the internet's limited capability for transmitting social cues such as facial expressions, smells, and body gestures. Internet encounters contain "less" social information and communication, and that might cause relationships to atrophy. Yet, people rarely interact with strangers over the internet. They have a strong sense of the others with whom they are online and internet encounters complement and increase the volume of communication among people, rather than substituting for richer in-person contact.

• It takes Marshall McLuhan's aphorism too seriously and *confuses the medium with the message.* In reality, people are not confusing the Facebook screen with the person at the other end of it, just as they have not confused the telephone receiver with the person with whom they were talking. Another McLuhan phrase seems more accurate: The media are "extensions of man" (in other words, people). When we send email to our spouse or look at a friend's Facebook updates, we do so with a strong understanding of the person with whom we are communicating.[12]

A large part of contemporary unease with technology stems from selective perception of the past and the superficial observation of other individuals. Many people think they are witnessing loneliness when they observe people walking or driving by themselves—not realizing they may be going to meet friends. They echo the Beatles: "All of the lonely people. Where do they all come from?"[13]

Yet, while people do not often open the door to strangers, they do drive, fly, and make internet phone calls over long distances to help their friends and relatives. People glance at Nelu Handa (chapter 4, figure 4.4) sitting by herself at her laptop and immersed in her iPhone chats and music, without realizing that she can also be interacting intensely with friends on the internet and the phone, as well as be available for in-person contact.

By contrast, tech enthusiasts have been excited about the positive possibilities of the internet for sociability. Their view has been that the internet would foster an enormous increase in cooperation by allowing far-flung people to interact. Rather than alienation and isolation, there would be more relationships, more long-distance relationships, and more connections among the members of a person's network. In the mid-1990s, John Perry Barlow was a leading enthusiast. The co-founder of the Electronic Frontier Foundation vividly prophesied that the Internet Revolution would bring about radical and positive social transformation: "With the development of the internet, and with the increasing pervasiveness of communication between networked computers, we are in the middle of the most transforming technological event since the capture of fire."[14]

Both sides of the debate—doomsters and enthusiasts—have been so excited by the internet that they can be too *presentist* and *parochial*: presentist, because they have rarely looked back to see if people had ever worried about relationships before the internet arose; parochial, because they have assumed that the internet's very existence would radically affect relationships. Social scientists call this sort of thinking "technological determinism," because it does not take into account how the use of ICTs is socially embedded and socially determined. This ignorance of context is why both the yeasayers and the naysayers have gone astray.

Their fixation on the internet has ignored nearly a century of research showing that technological changes before the internet—planes, trains, telephones, telegraphs, and cars—neither destroyed relationships and communities nor left them alone as remnants locked up in rural and urban villages. Fifty years of research have shown that people are in sizeable and supportive networks, both local and long-distance.[15] When asked, few people say that they, themselves, are living lives of lonely desperation, and they are aware that most of their friends, neighbors, relatives, and coworkers are also in supportive networks. Yet, even with these realizations, some people—and commentators—believe that they are the exceptions and that the masses around them are lonely, isolated, and fearful.

There is no reason to panic. The alarm that McPherson and associates sounded came from survey responses to only one narrow question. Looked at more broadly, a large body of evidence has shown that relationships and community and civic engagement thrive in social networks and that they are aided by the internet and mobile community. Take Robert Putnam's well-known book *Bowling Alone*, based on evidence from the middle to the end of the twentieth century. It argues that key reasons why involvement declined in community organizations such as bowling leagues is that people stayed home to watch television and many more women were doing paid work outside of their homes. But Putnam's own account shows that people are not bowling *alone*—despite the book's title—but in fact are bowling in networks of shifting sets of others who happen to be free that week.[16]

Research by Pew Internet, Toronto's NetLab, and others provides much evidence that that people have large and helpful networks. While the Internet and Mobile Revolutions have affected the nature of communities, they have transformed but not destroyed them for networked individuals in the networked operating system.

From Door-to-Door to Place-to-Place Networks

It helps to think about communities as fluid personal networks, rather than as static neighborhood or family groups. For too long, the model of community has been the preindustrial village where people walked door to door, and all knew, supported, and surveilled one another. These bygone village groups have largely transmuted into multiple, fragmented *personal networks* connected by the individuals and households at their centers. Figure 5.1 shows a typical network of close ties. For example, Wellman's early research found in 1968 that neighbors made up only 13 percent of Torontonians' core networks. Research elsewhere in North America confirmed this in Detroit, Los Angeles, and northern California. People find support and
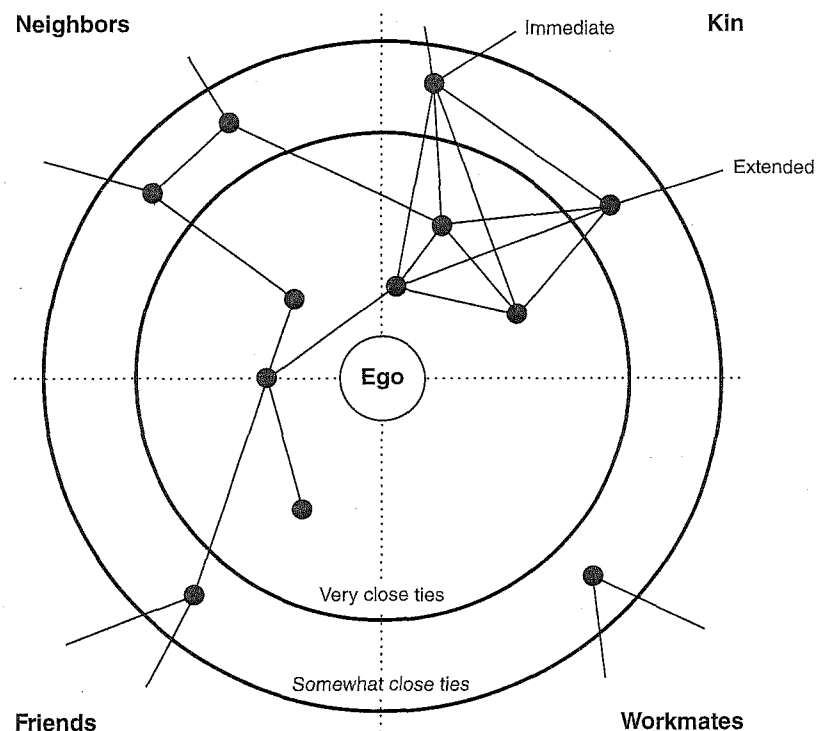
Figure 5.1
Typical personal network of close ties.
Note: Ego's ties to every network member omitted to reduce clutter.
Source: Barry Wellman. © 2004, used with permission.

sociability, but mostly with people who live outside of their neighborhoods and as often with friends as well as with kin. Rather than having a few go-to persons who provide a wide range of support.[17]

Although the move away from village groups did not happen instantly, it did happen after World War II, but before the Internet and Mobile Revolutions. The widespread abundance of cars, phones, and plane travel made "glocalization" possible (global + local connections). Social networks remained anchored in households, yet people often traveled substantial distances to get together with friends and relatives. Although neighboring remained, personal communities extended far beyond them. Wellman's awakening insight on this came when he was part of a "Save our Neighbourhood" meeting, intent on stopping the Spadina Expressway from knifing through downtown Toronto. The group was just like groups in other cities, fighting to preserve neighborhoods against cars. But as he looked around the room, he realized that many of that neighborhood's saviors did not even live there. They were not a little group of neighbors at all—they were a network of community activists who had come from all over Toronto.

Wellman's long-running research in Toronto has shown that although people continue to befriend neighbors, they have less connection with their neighborhoods than in preindustrial door-to-door times. Until the Mobile Revolution, phone calls came in by landlines to households—rather than wirelessly by mobile phones to specific people. Consequently, many interactions moved inside private homes—where much entertaining, phone calling, and internetting take place. At the same time, longer-distance connections proliferated. Both Wellman's first (1968) and second (1979) studies in the East York area of Toronto found that few strong ties were with neighbors. The more voluntary phone calls were stronger predictors of social closeness and support than in-person contact with neighbors and coworkers who might not have voluntarily chosen their relationships.[18] As such, people became connected *place to place*. They are aware of local contexts that they physically inhabit—especially home, work, bars, coffee shops, and airports—but they rarely know about the places in between them.

From Place-to-Place to Person-to-Person Networks

The personalized and mobile connectivity enhanced by the Triple Revolution and the weakening of group boundaries have helped relationships move from place-to-place networks to individualized person-to-person

networks. Most have private internet connections and personal mobile phones, and their own cars. Lower numbers of children mean parents need to spend less time at home raising them. There are fewer children to keep parents housebound. The loosening of religious, occupational, and ethnic boundaries also encourages interpersonal free agentry.

Rather than ties between households or work groups, people connect as individuals to other individuals, in person-to-person networks. They maneuver through multiple sets of ties that shift in importance and contact by the day. Each person engages in multiple roles at home, with friends and relatives, and at work or school. Their networks are sparsely knit, with friends and relatives often loosely linked with each other. These loose linkages do not imply a complete untethering of social relations: There are only a few isolates "bowling alone." Most people are connecting in shifting networks rather than in solidary groups.[19] Such networks provide diversity, choice, and maneuverability at the probable cost of overall cohesion and long-term trust.

While place-to-place networks show how community has transcended local boundaries, person-to-person networks show how community has transcended group boundaries. It is the individual—and not the household, kinship group, or work group—that is the primary unit of connectivity. The shift puts people at the center of personal networks that can supply them with support, sociability, information, and a sense of belonging. People connect in person and via ICTs. Their networking activities shift as their needs shift. While network members relate to each other as persons, they often emphasize certain roles. They are bosses to their employees, husbands to their wives, friends to their friends, and so on—with somewhat different norms for each network.

Networked individualism means that people's involvement in multiple networks often limits their involvement in and commitment to any one network. It is not as if they are going to the village square every day to see the same crowd. Because people can maneuver among milieus, their multiple involvements decrease the control that each milieu has over their behavior. Yet limited involvements work both ways. If a person is only partially involved in a milieu, then the participants in that milieu often are not as committed to maintaining that person's well-being. Like corporations that segregate their activities into somewhat autonomous units, people are now in communities of "limited liability," to use the British legal term.[20]

The shift to person-to-person networks has profoundly affected how people relate. This is not a shift toward social isolation, but toward flexible

autonomy. People have more freedom to tailor their interactions. They have increased opportunities about where—and with whom—to connect. As people maneuver through their days, lives, and networks, the nature of their ties varies from situation to situation. That means people are more selective about the people with whom they relate, because they no longer can be open to "the community." In the old days, people reportedly kept their outside doors unlocked and picked up their phones as soon as they rang. By contrast, a recent study showed that many Chicago homes, for example, are "islands of privacy." People practice selective concealment and disclosure. They don't open their doors readily—to avoid salespeople and religious proselytizers—and they use caller ID and voicemail to avoid phone contact with telemarketers, politicians, and others. Email is easily screened by software to remove most spam before viewing, and invitation-only Facebook offers preselected contacts.[21]

Norms are developing around these new social spaces. For instance, some teachers are now being encouraged not to become Facebook "friends" with their students. Moreover, Facebook and Twitter users control what information they disclose online. For example, neither Rainie nor Wellman discuss much of their personal lives on Twitter. Others provide code words to mask sensitive content, just as "partying" can mean sexual relations among teens. So far, texting and other mobile phone calls have been less of a problem because there are no public directories of their numbers.

Most people do not limit themselves to participation with just one or two groups. They gain advantages by having a diversified set of networks and knowing who has what to offer. That creates powerful social capital. For example, NetLab's Connected Lives research in the Toronto area of East York has found that people are apt to get hugs from their sisters, money from their parents, and sociability from their friends.[22]

Living in person-to-person networks has profound implications both for individuals and for the social milieus and overall societies that they are in. Networked individualism downloads the responsibility—and the burden—of maintaining personal networks on the individual. Networked individuals often have time binds, since they are constantly negotiating plans with disconnected sets of individuals within their expanding network. Active networking is more important than going along with the group. Acquiring resources depends substantially on personal skill, individual motivation, and maintaining the right connections.

What about our "self": that elusive concept of subjective identity that helps us to integrate our involvement in multiple social networks?[23] Are we the same person in different milieus, both online and offline? Sherry

Turkle has argued that our "second selves" online are different from our selves offline. Yet the research we present throughout this book shows that people's online and offline interactions are almost always integrated. However, Turkle rightly calls attention to the need for more research into how different aspects of the self get emphasized in different situations.

We suggest it is useful to think of a *networked self*: a single self that gets reconfigured in different situations as people reach out, connect, and emphasize different aspects of themselves. Our working visual image of this is an amoeba, with both a core nucleus and constantly changing pseudopods.[25] While a small number of scholars have used a concept similar to the networked self, there has been little systematic research—or even theorizing. The most relevant discussion is conducted by Jay David Bolter and Richard Grusin, who talk about a networked self switching among a variety of media to make their social networks perform well. They point out that people are "constantly making and breaking connections, declaring allegiances and interests and then renouncing them—participating in a video conference while sorting through email or word processing at the same time."[26] However, they anchor the concept in communication media rather than in multiple roles in social networks, as we do.

Networked Relationships On- and Offline

With the shift to person-to-person networks, the gap between physical space and cyberspace—or for that matter, between writing and talking—is diminishing. For instance, a Pew Internet study found that American teens usually think of their texting as "conversations" rather than as "writing."[27] Teens are even more text-involved, checking for multiple Facebook updates and text messages from their "friends," who in fact range from close friends to distant acquaintances. Expressions such as "see you later" or references to conversations such as "she told me that" could as easily refer to in-person encounters, emails, tweets, texts, or Facebook postings. Technology-enabled interaction fits seamlessly into people's everyday lives and complements other practices.

When people think of the impact of the Internet and Mobile Revolutions on relationships and community, two contrasting images often come to mind. One is that of a world without borders and an endless amount of friendships and knowledge at people's fingertips—Marshall McLuhan's mythological global village come to life.[28] The contrasting image is of a lonely individual, hunched over a computer or smartphone screen, avoiding all human interaction. These two extreme examples are at odds, and

this ambivalence has also been reflected in papal pronouncements. In June 2011, Pope Benedict XVI lauded the power and value of ICTs for spreading information, but warned that people need to get away from their computers and meet people in person:

The new technologies allow people to meet each other beyond the confines of space and of their own culture, creating in this way an entirely new world of potential friendships. This is a great opportunity, but it also requires greater attention to and awareness of possible risks. Who is my "neighbor" in this new world? Does the danger exist that we may be less present to those whom we encounter in our everyday life? Is there is a risk of being more distracted because our attention is fragmented and absorbed in a world "other" than the one in which we live? Do we lose time to reflect critically on our choices and to foster human relationships which are truly deep and lasting? It is important always to remember that virtual contact cannot and must not take the place of direct human contact with people at every level of our lives.[29]

The Pope also tweets occasionally as PopeBenedictXVI.

It is appropriate that the pope recognized the importance of the Internet and Mobile Revolutions because in reality, people are positively embracing them. In July 2009, the Telus Canadians and Technology national survey found that more than half (55 percent) of Canadians aged thirteen and older agree that "the internet has improved my connections with friends and family." Only 15 percent disagree: a ratio of almost four to one. Moreover, 46 percent of the Canadians said, "the internet has improved the quality of my life": a ratio of nearly three to one. Almost as many (42 percent) go so far as to say, "I cannot live without access to the internet." Yet, the internet has not taken over completely, for only a minority say they spend more time interacting with friends and family online than in person.

Contrary to concerns that the internet would reduce other forms of contact, the evidence shows the opposite: the more internet contact, the more in-person and phone contact. These are not either/or relationships: People use the internet and mobile phones to keep in touch, to arrange get-togethers, and to follow up after they meet. Despite fears that the internet would curb relationships by luring people to the screen and away from in-person contact, the number of important relationships may even have grown. One survey found that Twitter users are more involved in social activities.[30] More broadly, the average number of friends whom American adults see in person at least weekly grew 20 percent in five years: from 9.4 in 2002 to 11.3 in 2007. Moreover, this does not include relatives unless the respondents consider them to be "friends." The same

study shows that internet users have somewhat larger networks than non-users. Moreover, heavy internet users have had the biggest increase in their number of friends: a 38 percent average increase from 9.0 in 2002 to 12.4 in 2007 (figure 5.2). Similarly, a Pew Internet study found in 2004 that internet users have had 23 percent more active network members than non-users.

In short, being on the internet is associated with having both more friends and a greater increase in the number of friends over time. The number of friends has increased even for non-users, although not nearly as much. That non-users has increased their friendship contacts suggests two possibilities: The use of the word "friend" may have broadened between 2002 and 2007 as MySpace and then Facebook became popular, or the halo effect of the internet has created more opportunities for friendship because most of the friends of non-users undoubtedly are internet users.[31]

ICTs are about society as well as relationships. They support participation in traditional settings such as neighborhoods, voluntary groups, churches, and public spaces. They also support involvement in interest groups, whose membership might have been too small or spatially dispersed in pre-ICT days, to find one another and to get together in person. For example, communication scientist Nancy Baym has shown how the internet allows lovers of obscure indie bands to find each other online and becoming acquainted offline. Like rock parties, significant political
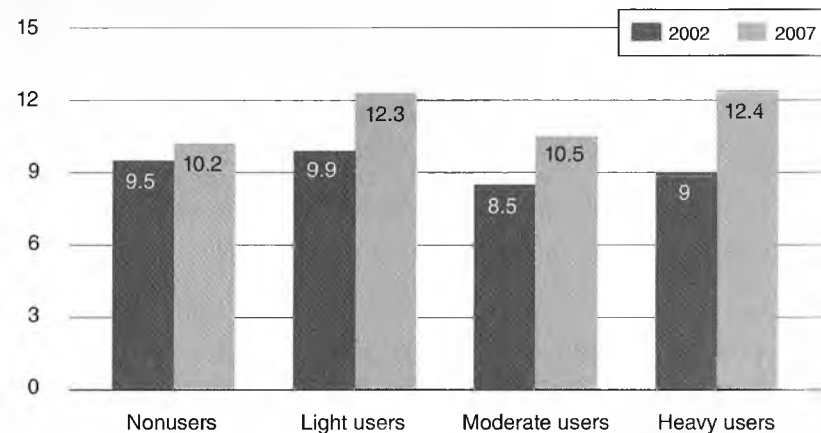
Figure 5.2
Change in average number of offline friends seen in person at least once per week.
Source: Wang and Wellman, 2010 (see note 31).

organization begins on the internet, organizes via mobile phones, and then meets in person.[32]

As a result, North Americans are in more contact with the members of their social networks than ever before. For example, the Pew Internet's "The Strength of Internet Ties" study found that people who email the great majority of their core ties at least weekly are also in phone contact with more core ties than are non-emailers. Many people use the internet to keep up with their weaker ties. Computer science graduate student Sarita Yardi explains:

I use the [I]nternet for two reasons: First, to keep up with my family. I have 18 cousins, and most are married. Most have kids too and will often post pics. I've become closer—also in real world interactions—than I would otherwise be with all of them.

Second, I keep up with researchers in my community. For example, at the conference I'm at, I see when people arrive, where they are going tonight, who wants to grab dinner, etc. Facebook is a little more manageable on a large scale than Twitter. One of the best benefits has been to see their work-life balance (most of them have a reasonable balance), and I see a mix of statuses and pics about kids, awards, travel, rants, updates about research, and it makes me confident that it is possible to do all that too.[33]

The more personal kinds of ICTs often intensify close relationships. Connected Lives participant Vamos values the personal autonomy he gets from using email. "If a friend sends me an email, I can respond—not immediately," he explains. "If I have something to do, I can say okay, I can send him an email after tomorrow when I have more time. Maybe [if he phoned] he can't understand that you can't speak with him for one hour, two hours. That's simpler on email."

Until recently, younger adults have been the most involved in the Internet and Mobile Revolutions. As Toronto student Nazia Shahrin recounts, "I find my mother and father value face-to-face communication a lot more than I do. To me, a phone call is good enough, while they really need to see my face. It creates a lot of arguments where I am screaming, 'I talk to you every day' and they are yelling, 'But I haven't seen you in two weeks.'"

Despite the ubiquity of the internet, the Center for the Digital Future's 2007 survey of Americans found that that only 23 percent of internet users have one or more "virtual friends" whom they have only met online. To be sure, the more people use the internet, the more virtual friends they are likely to have. Among those who have virtual friendships, heavy users (who use the internet at least three hours per day) report having an average

of 8.7 online friends compared with only 1.3 for light internet users (online an hour or less per day). Moreover, just as in-person relations lead to more online contact, 20 percent of Americans have at least one relationship that started online migrate to in-person contact. Here, too, heavy internet users have more migrating friends (an average of 2.2) than do light users (0.5).[34]

While only a small percentage of people are heavily involved in virtual friendships, to some they are important—even consuming. Many of them are immersed in massively multiplayer online role-playing games (MMORPGs) that embrace thousands of players simultaneously, loosely organized as networked clans. But even in these, virtual friendships tend to "decay or grow inert without interaction," reports anthropologist Bonnie Nardi in her study of the World of Warcraft MMORPG. For example, there is no real group pressure to show up for clan activity, and people can switch clans easily. The games lack the rich ways that in-person relationships have to maintain connections.[35]

Still, neighbors and local concerns matter in both online and offline encounters. Communications scholar Keith Hampton spent considerable time looking at how people connect with neighbors online and offline. In the late 1990s, he and coauthor Wellman studied the pioneering "wired suburb" of "Netville" near Toronto, comparing residents who used the internet with those who did not. They found that as compared with non-internet users, internet-using neighbors had larger and wider-ranging local networks that socialized more with each other.[36] Further reflection suggests that the more active internet use resulted from the suburb setting up a local listserv that encouraged such interactions. Moreover, as settlers in a newly built suburb, the residents became part of the larger network of information—for example, where the dry cleaners were, who would baby sit, and efforts to press the area's developer to fix sinking driveways and leaky plumbing. The email list served to facilitate the flow of information regardless of physical proximity and according to the users' convenience. When such incentives for local internet connectivity are not present, neighbors interact less intensively. To help build local community, Hampton created a set of internet-based eNeighbors.org and iNeighbors .org sites across America to aid local connectivity.[37]

Despite the distance spanning of the internet, people are still much more apt to have friends, coworkers, and schoolmates who live a short walk or drive away, they use the internet and mobile phones between in-person encounters to share information, coordinate contact, provide support, and just socialize. In-person contact predominates in all

neighborly interaction, but the amount of such contact may be declining. The Pew Internet "Neighbors Online" study found that while 46 percent of Americans talk face to face with their neighbors about community issues, only 21 percent discuss such issues over the phone. Even less—11 percent—read a blog about neighborhood issues, a mere 5 percent belong to a neighborhood listserv (such as Netville had), and only 9 percent have exchanged emails about neighborhood issues.[38] So, proximity matters to networked individuals, but for most, the neighborhood is not where their community lives are focused.

How Large Are Personal Networks?

The high level of friendship activity online and offline suggests that worries have been overstated that Americans have only an average of 2.1 close ties. Yet, the research on declining networks is based on a single question about people "discussing important matters" with others. But, that is only one kind of relationship in Americans' much larger core networks.

How large are people's personal networks? One widely known estimate by Oxford anthropologist Robin Dunbar argues that limits on people's cognitive information-processing capacity—what he calls their "social brain"—limits the maximum size of cohesive groups to 150. He bases his estimates principally on his studies of primates and villagers in less-developed societies and structured military organizations. Yet, as Dunbar himself points out, "The 150, as we understand it, is simply one of a series of layers of embedded relationships, and this seems to apply as much in the contemporary world as the ethnographic world."[39] The outer most layer, Dunbar explains, "demarcates those whom you know as individuals from those whom you recognize but only have casual relationships with." A social network "consists of four layers, the Circles of Acquaintanceship, which scale relative to each other by a factor of three (an inner core of five intimates, and then successive layers at 15, 50 and 150)."[40]

Does it matter if a personal network contains 150 or 1,000 people when most of these are undoubtedly weak ties—nodding acquaintances or people rarely in contact? The answer is "Yes" for many reasons. For example, the developers of social media want to know how much space to allocate for information about friends. They have eagerly seized upon what they call "Dunbar's number" because of their need to estimate the size of networks when they design social media such as Facebook—despite the fact that they are designing for less-bounded networked societies and not for village-like groups.[41] Likewise, policymakers want to know if people are lonely or

connected, so that they can understand if they need extraordinary mea-
sures to build community. Even weak ties can provide a sense of commu-
nity.[42] Social psychologists want to know about the origins of lonely
people: Where do they all come from?[43] And epidemiologists want to know
network size because many diseases, such as HIV/AIDS, come from human-
to-human contact.[44]

Network size also matters because people can often reactivate latent ties
when they travel to a place where they know people, or they rekindle a
common interest. At the same time, when people move, they are able to
retain some of their relationships in the places where they used to live.[45]

The larger the network, the more ties that can pass along information.[46]
Moreover, people with more ties tend to connect to more networks. Larger,
more diverse networks connect people to a greater variety of social milieus,
providing a greater variety of information and social contacts.[47] There is a
nice spin-off societal effect that sociologist Émile Durkheim first identified
in the late nineteenth century as the "division of labor in society": When
ties connect different social networks, their interconnections help to inte-
grate these different milieus in an overall society, providing a social glue
that can help hold a society together.[48]

The larger the network, the more health benefits. Larger networks
provide more social support. As Peter and Trudy Johnson-Lenz found
(see chapter 1), such support reduces psychological distress by providing
more information, more goods and services, and a greater sense of con-
nectedness. Moreover, larger in-person networks provide more immunity
to serious infectious diseases by exposing people to a wider range of minor
infections such as common cold viruses.[49]

Of course, the more people use the internet, the easier it is to connect
online with large numbers of people.[50]

Thus, size matters. Although some might think that smaller networks
will have higher-quality relationships—quality compensating for the lack
of quantity—in fact, quantity goes along with quality. Not only do larger
networks provide more support, but each person in a larger network is
likely to be supportive.[51] We do not know why, but we suspect that social
capital breeds more social capital in a positive feedback cycle. A large,
active, specialized and resource-filled set of ties is an important resource
in its own right.

Dunbar's number is set too low for most people in developed countries
because their networks have many more than 150 members. Such higher
numbers were found even before the advent of the internet because people
have been moving among multiple sets of ties for generations. Moreover,

social media such as Facebook have increased the carrying capacity of
relationships: It takes little work to keep large numbers of hardly known
(or long-lost) ties on your "friend" list. While many are weak ties at the
moment, they can be called upon when needed. Networks are so large,
segmented, and far-flung that many people are not in frequent contact
with many members of their networks. This means that people may not
remember many of those whom they know—unless they see them, see
their names or pictures, or get another hint.

To deal with these complexities, researchers have used a variety of
techniques to estimate network size. For example, one research team
found that Americans can name an average of 290 persons as members
of their personal networks when they asked them to spot names in a
telephone book and identify first names they know.[52] Name identification
is tricky, for people are more likely to remember a boy named Sue than
a girl named Sue. When researchers more recently took into account the
difficulties people have in recalling common first names, they found
much larger networks: an average (or mean number) of about 611 members
in of their networks with a median of about 470 people. The range in
Americans' network size is vast, with 90 percent of the adult population
knowing anywhere between 250 and 1,700 others, and half knowing
between 400 and 800. Women know about 9 percent fewer people than
men do.[53]

Scholars Keith Hampton and Lauren Sessions Goulet worked with Pew
Internet researchers and a refined version of these name-recall methods to
find that the average American has 634 social ties. Internet users, with an
average of 669 ties, have more connections than nonusers, with an average
of 506 ties. Moreover, heavy internet users have more ties than lighter
users. At the same time, the average mobile phone user has 664 ties and
the average user of a social networking site has 636 ties.[54]

But, even these larger numbers underestimate the number of people
that each American adult knows—because they are all based on recalling
names, and people will forget lots of others until they meet them or are
otherwise reminded. As psychologists Melinda Blau and Karen Fingerman
show in the well-named *Consequential Strangers*, people know many others
whom they usually do not list in network surveys, such as the woman who
runs the local variety store who smiles every weekday as she sells *The New
York Times*.[55] All of these acquaintances embed people in society, provide
useful services, sometimes open up new opportunities, and often give
people a sense of belonging as they go through the day. The most accurate
(and time-consuming) way to count these people is to follow someone

around. Anthropologist Jeremy Boissevain did this in the 1970s when he followed two people in Malta for a year and had them keep records when he was not with them. Boissevain found the "true" average size of the networks in his small, intensive study to be more than 600, consistent with the estimates done by two recent research groups and much larger than Dunbar's number.[56]

Who Is in Personal Networks?

Personal networks tend to have roughly similar mixtures of people: friends, relatives, neighbors, and workmates (or schoolmates). Immediate family (parents, adult children, and siblings) and friends usually dominate the core of North American networks. For example, the Connected Lives study shows that half (50 percent) of very close ties were kin. The rest are with friends (41 percent), a handful of neighbors (4 percent) and work/school mates (5 percent) (see table 5.1). But in societies with monogamous marriages, people can have only a limited number of kin even if they get married more than once. In the 1950s, anthropologists estimated that the British had about fifty kin on average: Smaller families

Table 5.1
Percentage of Closeness

Role	Very Close	Ambiguously Very Close	Somewhat Close	All Close Ties
Immediate kin	44	20	6	22
Extended kin	6	10	14	11
All kin	*50*	*30*	*20*	*33*
Friends	37	50	53	47
Neighbors	4	7	9	7
Work/school mates	5	6	10	7
Organizational ties	0	0	4	2
Online-only friends	0	0	0	0
Other	4	7	4	4
All non-kin	*50*	*70*	*80*	*67*
TOTAL	100	100	100	100
Number of ties	348	229	462	1,039

Source: Pew Internet & American Life Project, "The Strength of Internet Ties," 2006.

may have made the average even lower now.[57] But there are no such limits on other types of relations; they are limited only by a person's carrying capacity for friendships, neighbors, workmates, and more distant relatives.

Any network of relations around an individual can be a personal network: be it one of emotional support, gift giving, or email exchanges. Thus, studying personal networks provides information about people's social worlds. Friends tend to outnumber relatives in personal networks. The larger the network, the higher the percentage (and number) of friends who are in it. Although the Connected Lives study shows that kin comprise 50 percent of very close ties, friends and other non-kin (neighbors, workmates, etc.) comprise fully 80 percent of somewhat close ties. Using a somewhat more relaxed measure of closeness, Pew Internet research shows that Americans have twenty-three core ties in 2004 as well as twenty-seven other, but still significant ties: Most are friends and not kin.[58] Moreover, the average person's ten to fifty close ties are only in the core of their networks: Their other five hundred-plus ties are almost entirely with friends, acquaintances, and consequential strangers. The Connected Lives study does not show any close ties maintained solely via the internet; all meet in person at least once in a while.[59]

Sparsely Knit, Segmented, and Specialized Personal Communities

Networked individuals have "sparsely knit" personal communities, meaning that most network members are not directly connected with one another. As far back as 1968, the first Connected Lives study found that only one-third (33 percent) of an East Yorker's five socially close ties were linked with each other. Further research in 1979 showed that weaker ties are even more sparsely interconnected, with a density of 13 percent.[60] The larger the network, the less likely that two network members will be connected. We are not aware of more recent studies of the density of personal networks, although it is a good bet that the internet—especially Facebook, LinkedIn, Twitter, and email—enhances the density of interconnections among a person's relatively close ties by allowing friends of friends to become aware of each other.

Personal communities are usually specialized, with different network members helping in various ways.[61] The exception is spouses who supply each other with many types of support.[62] Friends are valued as confidants and social companions. Neighbors and coworkers are conveniently suited for handling unexpected emergencies because their nearness enables them

to react quickly with goods and services. Parents, adult children, and in-laws often provide emotional and long-term support: financial aid, emotional aid, large and small services such as childcare, health care, and home repairs. Similar to East Yorkers, Northern Californians name fifteen to nineteen network members who have helped them in up to ten different ways.[63]

Supportive people tend to have longer-lasting relationships.[64] Yet, networks do change over time. Friendships are not always forever; neither are some kinship ties. Breakups became more widely known as "unfriending" when the Facebook term "unfriend" became the Oxford University Press "word of the year" for 2009. However, there is not much research evidence about how friends break up, fade away, or become weaker ties. A preliminary study found that those who initiate friending requests on Facebook are more likely to be subsequently unfriended (disconnected) in the relationship than are those who receive the friendship requests—presumably because some friending requests were unwanted.[65] One small NetLab study, done before the advent of Facebook, suggests that changes in network membership are not gradual but sudden, triggered by changes in personal situations such as marriage, childbirth, and residential moves—a personal network version of what paleontologist Steven Jay Gould has called "punctuated equilibrium" on the global evolutionary scale.[66]

Core Networks Do More than Discuss Important Matters

We began this chapter with the alarm that Americans have only 2.1 people with whom they can discuss important matters, while a sizeable minority does not have any such discussion partners. Presumably these people are at the core of someone's personal network. But when we delved into the matter, we found that there was more to the core than discussion partners.[67] For one thing, the original survey did not ask about what "important matters" people discussed. When sociologists Peter Bearman and Paolo Parigi did, they discovered the variety of people's concerns. While some talked about war and peace or getting a job, others talked about eating less meat and cloning headless frogs.[68]

Not only is there variety in what people discuss, but their closeness comes from more ways than discussing important matters. Different people are close for different reasons, as sociologist Claude Fischer first documented in 1982.[69] For example, they could be *doing* things for each other (rather than *discussing*); be *mutually enmeshed* in a broader kinship, friendship, or workplace network; *see each other often* at work or in the

neighborhood; or *chat* frequently in person or on the internet. As new Connected Lives research is showing, the multiple ways in which people are socially close means that the core networks of close ties are much larger than the 2.1 persons whom the U.S. General Social Survey (GSS) reported discuss important matters.

To understand this better, the Connected Lives study interviewed 84 East Yorkers to learn about whom they felt close to in their personal communities—and why. The researchers asked about closeness in two different ways: by asking participants a direct question, and by asking them to place their network members on a series of concentric rings like a target, with the innermost ring indicating those who are "very close" (see figure 5.1). By only choosing those who are "very close" on both criteria, the researchers are more confident that they are studying ties that are very close. The Connected Lives study finds that the average Torontonian interviewed feels very close to 4.1 network members (answering "very close" on both measures) and pretty close to another 8.2. In short, they feel close to 12.3 people—not 2.1.[70]

But what does such closeness mean? Surprisingly, only 31 percent of the very close ties "discuss important matters" with each other: an average of 1.1 ties. The respondents also discuss important matters with 1.3 of their other somewhat less close ties. The total of 2.4 close ties who reportedly "discuss important matters" with the Connected Lives participants is more than the average of 2.1 found by the 2005 GSS but less than the 1984 GSS average of 2.9.[71]

If people do not discuss important matters with all of their very close ties, then what relationships connect them with their other very close ties? "Salami analysis"—cutting off and analyzing one chunk at a time—reveals that 20 percent of those who do not discuss important matters "chat about the day" with each other. Think of friends and relatives schmoozing. Another 12 percent of the very close ties neither discuss nor chat, but do provide various kinds of social support such as information about health, help with home renovations, and advice about computers.

What about the 37 percent of the very close ties who neither discuss important matters, nor chat about the day, nor exchange social support? Frequent contact seems to account for most of the rest: 13 percent see each other in person at least weekly, while 12 percent of the ties do not see each other in person but connect by email at least weekly. A few (4 percent) just keep in contact by talking on the phone at least weekly. The small number of remaining very close ties are almost equally divided among friends, neighbors, and workmates (4 percent) and parents and

in September 2010: Some 42 percent of all American adults (53 percent of internet users) are Facebook users.[79] Many have large and active networks on Facebook. The mean number of users' Facebook "friends" is 229, or 34 percent of the estimated size of Facebook users' overall social networks. Almost a third of the Facebook users (31 percent) say they check the site multiple times a day, and another 21 percent say they check in at least daily. And 15 percent say they change their profile at least once a day. The growing linkage between mobile connectivity and social networking is apparent in the study. Some 35 percent of those Facebook users access their profile pages from time to time with their mobile phones.

This same survey showed that 85 percent of the Facebook users comment on other people's status, wall, or links—and 21 percent do so every day. Similarly, 85 percent comment on other people's photos—and 19 percent do so every day. The survey shows that 78 percent use the "like" button to comment on others' status, wall, or links—and 25 percent say they do so every day. Also, 72 percent send private Facebook messages—and 10 percent do so every day.

Facebook has become so essential and appealing to networked individuals that it is consuming ever-increasing amounts of time. Nielsen Company figures show this (see table 5.2). The company reports that throughout the month of March 2011 the average internet user spent 6.5 hours on Facebook, compared with 21 minutes on Google, the most heavily trafficked site on the web that month.[80]

By engaging in these activities, networked individuals influence the content and flow of interpersonal information in ways that were unseen prior to the emergence of social networking sites. Figure 5.4 provides just a snapshot of the kind of personal information that networked individuals publicize on their online profiles. Nicole Soriano (a pseudonym) has filled out her Facebook profile with tidbits of personal information. For instance, just on this one page, Nicole has shared her location (Toronto), educational background (Political Science and Sociology at the University of Toronto), partnership status (in a relationship), languages (English, French, and Spanish), birthday (September 6), and religion (Catholicism). She provides links to her friends (also pseudonyms here), and has set up her social networking profile to indicate her favorite music, books, and movies. Nicole also shares a total of 921 photographs from her daily life and travel. Networked individuals on Facebook can share other details such as their current and previous work experience, favorite quotations, activities, interests, and contact information.

Table 5.2

Percent Using Top Ten Internet Sectors by Share of Time U.S. Internet Users Spend online

Rank	Subcategory	% Share of Time June 2010	% Share of Time June 2009	% Change in Share of Time
1	Social networks	22.7	15.8	43
2	Online games	10.2	9.3	10
3	E-mail	8.3	11.5	−28
4	Portals	4.4	5.5	−19
5	Instant messaging	4.0	4.7	−15
6	Videos/movies	3.9	3.5	12
7	Search	3.5	3.4	1
8	Software manufacturers	3.3	3.3	−0
9	Multicategory entertainment	2.8	3.0	−7
10	Classifieds/ auctions	2.7	2.7	−2
	Other	34.3	37.3	−8

Source: The Nielsen Company. See note 80.

Although the award-winning 2010 movie about Facebook is called *The Social Network*, Facebook is mostly about groups rather than networks. Rather than making it easy to limit certain kinds of information to different types of people, Facebook's profiles are set up to default to the assumption that all people want to make all of their information available to all of their Facebook friends. This is a key part of Facebook founder Mark Zuckerberg's philosophy: "You have one identity. . . . The days of you having a different image for your work friends or co-workers and for the other people you know are probably coming to an end pretty quickly. . . . Having two identities for yourself is an example of a lack of integrity. . . . The level of transparency the world has now won't support having two identities for a person."[81]

So, Nicole's parents hear about her late-night partying, and her friends learn obscure details about her second cousins. Other social networking sites such as Google+ are trying to capitalize on this one-size-fits-all structure by allowing users to segment their networks and send different information and updates to those different segments.
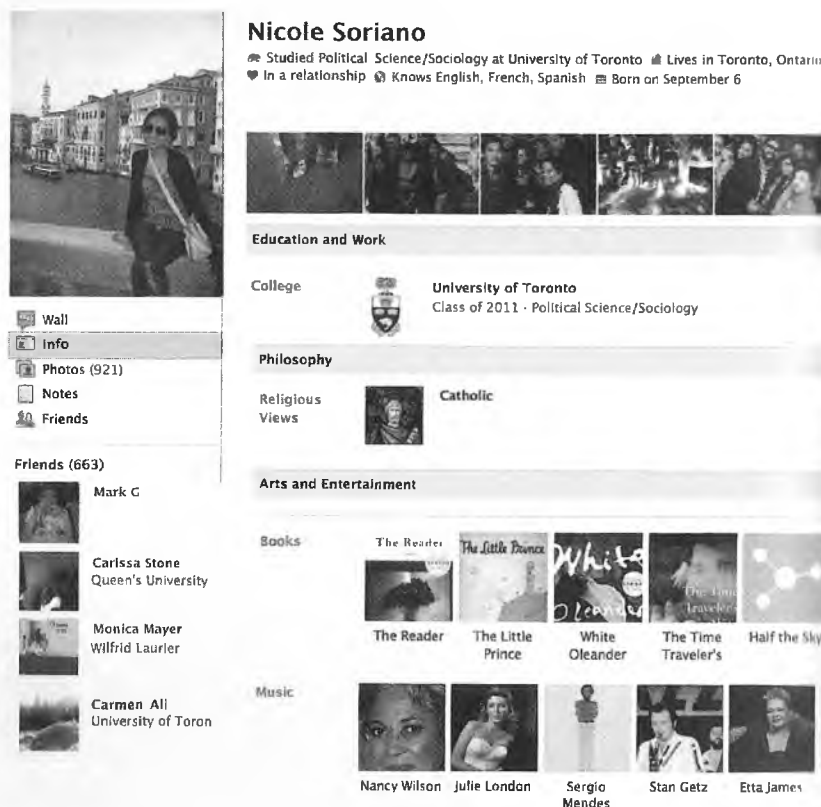
Nicole Soriano

🎓 Studied Political Science/Sociology at University of Toronto 🏠 Lives in Toronto, Ontario
💜 In a relationship 🌐 Knows English, French, Spanish 🎂 Born on September 6

Wall
Info
Photos (921)
Notes
Friends

Friends (663)

Mark G

Carissa Stone
Queen's University

Monica Mayer
Wilfrid Laurier

Carmen Ali
University of Toron

Education and Work

College   **University of Toronto**
                   Class of 2011 · Political Science/Sociology

Philosophy

Religious   **Catholic**
Views

Arts and Entertainment

Books   The Reader   The Little Prince   White   The Time   Half the Sky
                                             Oleander Traveler's

            The Reader   The Little   White   The Time   Half the Sky
                         Prince   Oleander Traveler's

Music

            Nancy Wilson Julie London Sergio   Stan Getz Etta James
                                        Mendes

Figure 5.4
Screen shot of a networked individual's Facebook profile.
Source: © 2011, used with the Facebook user's permission.

Much of the information on Nicole's profile links to other pages within the social networking site itself and to external websites. For instance, the University of Toronto is a link to another page on Facebook that provides a description of the school as found on Wikipedia, related posts by Nicole's friends, and all the people who have also added this university to their profile. Similarly, the icon for her favorite book, *The Reader*, links to another Facebook page that gives a description of the book and shows how many other Facebook users like the novel. Thus, these links allow for a denser and broader network of information, not just about Nicole, but also about the things she likes and the other networks she is a part of.

Facebook news feeds update Nicole's friends with what is happening in her life. The feeds are neither random nor comprehensive; Facebook uses algorithms that try to tailor the information that each friend gets according to their interests. Thus, each friend gets a somewhat different picture of Nicole's life on their customized news feed. Some information is widely shared: When Nicole's status changed from "single" to "in a relationship," all her friends wanted to know "who?" and "why?"

What impact has the now-dominant Facebook had on networked relationships? It has clearly allowed more sustained contact with weaker ties. Even as people move, change jobs, and switch their attention zones, Facebook efficiently allows them to stay in touch with others, broadcast basic update messages, and receive similar updates from their friends. Facebook has also enabled reconnections. Long-lost friends can locate each other and reconnect with old school chums, onetime lovers, former coworkers, and former neighbors.[82]

Facebook promotes bridging as well as bonding: By following a chain of Facebook friends, people connect to other personal networks, providing potential access to other social milieus.[83] Mutual ties—both people are friends with the same third party—are especially important for forming new connections, as one friend validates the other.[84] As Toronto student Sharanpreet Kelley notes:

As I parted ways from my friends in high school offline, we maintained our relationship online. When I started university, my network swelled with new people. Facebook functioned unofficially alongside the university system, providing me with information on social events as well as on how my peers were doing. This open discussion played a key role in meeting people outside of my immediate network. I have depended on Facebook since high school, and it is difficult not to notice how dependent I am for social rituals, updates, and entertainment. Most of my friends and I do not see each other on a daily basis, so Facebook serves as a medium to continue light conversations and maintain our social ties.

Her story also shows how useful it is to be perpetually and pervasively aware of who is doing what with whom. Of course, this extreme transparency means that Facebook friends may learn unwanted things about one other—such as political leanings or sexual adventures—that may lead to unwanted attempts to control each other's behavior or may even rupture relationships.

Yet, the importance of Facebook goes beyond its role in connecting current and former friends. It has become a personal portal embodying the networked individual. Not only are there links to people, but to tastes—such as Nicole's books—and "likes" to even more books, music, and organizations. Corporations are now using Facebook pages extensively, so that if Nicole likes San Miguel Beer, she can link to the company's page and

they will know about it. Facebook has become each person's "go to" page: their home base. It is why they stay on Facebook for so long. Just like the car has become the personal basis for transportation, the smartphone for personal communication, and Google for information, Facebook is becoming a key web in the social operating system—connecting each person to who and what they are interested in. At the same time, Facebook is amassing tons of information about the individual, the aggregated profiles of individuals (for example, young Canadian women with Chinese family names), and their social networks. Thus, Facebook is both the epitome of networked individualism—each person is an individual participant—*and* of the networked operating system as a whole.

The More, the Merrier

Critics used to worry that the internet would be an inadequate replacement for human contact because hugging a computer screen is less satisfying than hugging a friend. In fact, the evidence shows that ICTs supplement—rather than replace—human contact. People will make do with electronic contact if they cannot be together in person. A more anthropomorphic device is the mobile phone, which some people see as their third skin. But despite whispered endearments into the phones, the boundaries are clear even here.[85]

Do ICTs substitute for in-person communication, extend it, or transform it? The evidence for the *substitution* argument is almost nonexistent except for early studies of apprehensive newcomers to the internet. If anything was being substituted for, it was television.[86] Consider what happened when Toronto student Sharanpreet Kelley experimented with going off of Facebook and Twitter for two weeks in 2011. "As soon as I went offline, I wanted to check back immediately to see what I could have possibly missed," she says. "I had to distract myself with other activities, but my attention kept on going back to what was going on online. I felt like I was being isolated from my community. This was highly frustrating, because it was as if I had been exiled from my community."

Sharanpreet ended her cold-turkey experiment early: She could only handle her partial withdrawal from the network operating system for eight days instead of two weeks. There were events to plan and things to do. "FOMO"—fear of missing out—played a key role in her return: Her network was too individualized and spatially dispersed to keep in touch solely through in-person and telephone contact. Sharanpreet's experience partially supports the *extension* argument. Facebook, email, internet phoning (video and audio), mobile phoning, and texting are continuations of interpersonal conversations.

But, Sharanpreet says that things have gone beyond supplementary extension. ICTs have *transformed* communication, relationships, and community. They support rapid-fire exchanges among individuals—in pairs or groups—that would only be partially feasible in village pubs. Social media such as Facebook, Twitter, and email lists support "social neighborhoods" that may be as important as the physical neighborhood or workplace in providing frequent contact and information about others. Moreover, interconnected personal networks now aggregate so that the sum is more than the whole.

To what purpose? So far, systematic research has found ICT use to be more beneficial than harmful. This is true in city, suburb, and countryside.[87] The question is no longer the simple one of whether or not the number of relationships in personal networks is rising or falling in a hyperconnected world. Although earlier studies were ambiguous, it is now clear that they are rising in number and in the volume of contact.[88] Networks are larger, more diverse,[89] and supportive.[90] The question is not if but *how* ICTs intensify bonding and promote bridging. These happen both through casual interaction via email and Facebook, and through ad hoc support organized to help those in need. Susannah Fox reports this dimension of Pew Internet's research into how people support others with illnesses even when they have never met: "The most striking finding of the national survey is the extent of peer-to-peer help among people living with chronic conditions," she notes. "One in four internet users living with high blood pressure, diabetes, heart conditions, lung conditions, cancer, or some other chronic ailment (23 percent) say they have gone online to find others with similar health concerns. By contrast, 15 percent of internet users who report no chronic conditions have sought such help online.[91]

Fox summarizes that "people living with chronic disease who go online are finding resources that are more useful than the rest of the population."[92] Similarly, a Dutch study found that online communication stimulates teens' well-being,[93] while an American study showed that Facebook users provide social support. As one person in the Facebook study mused, "When you Google it, they just give you a list of medicines. You don't know if the medicine works or not. You talk to somebody else [on Facebook] who has a child and know that they gave it to their child."[94]

Networked relationships on and offline reinforce networked individualism. Both the internet and the mobile phone allow people to use their social switchboards to move between their social circles and to inter-

connect them. The internet and mobiles help people to bond within their circles by supplementing their in-person contacts. Further, their ease of use helps people to bridge networks as they never could before. They allow people to shop at specialized relational boutiques for support, similar to how Peter and Trudy Johnson-Lenz obtained diversified, often specialized, help from friends near and far in the story we recounted at the beginning of this book.

We have interviewed scores of networked individuals who use a panoply of gadgets and applications to orchestrate their lives. Theirs is a complicated dance through the networked operating system. They use email for certain kinds of networked communication; text messaging, Facebook posts, private Facebook messages, and Twitter posts for others; and phone calls for communication that requires more extensive conversation. Today individuals have more communications options than ever, and that means they have to work harder to figure out which gadget or mobile apps to use for which kinds of activities. Yet, segmenting their tools and messaging strategies allows them to handle different tasks across their segmented networks. It is common for multiple devices and applications to be running simultaneously in the network operating system. In many cases, ICTs are used to organize in-person contact.

The more people use the internet, the more friends they have, the more they see their friends, and the more socially diverse are their networks. The internet and mobile phones are both an outcome and a cause of larger networks. They help people get social support. They provide conduits for information, guides to services, and ways to seek and ask for help. The internet, especially, amplifies people's social capital—the resources they get from the ties that they draw upon for their needs and interests. As we have shown elsewhere in this chapter, the internet is especially good for connecting people with their weaker ties and with a broader diversity of people.

This chapter has described how personal networks have expanded, become more complex, and speeded up. Communities continue to exist, except as spacially dispersed and differentiated personal networks rather than as neighborhoods or densely knit groups. When we see individuals sitting alone, we should not assume they are isolated or lonely: With internet access and mobile phones they have community immediately at their fingertips. And when they need a real hug or material aid, transit, cars, and planes are often available.[95] People's lives offline and online are now integrated—it no longer makes sense to make a distinction.

6   Networked Families

The Triple Revolution—Social Network, Internet, and Mobile—has undermined the classic notion that people's homes are their castles: inviolate, defended households filled with family activity.[1] Rather, they are bases for reaching out and networking—with family members, friends and relatives, community groups, and work.

Hillary Clinton understood this in her book *It Takes a Village*. Despite the title, Clinton recognized in the text that families are not bound up in villages but are networked: "The networks of relationships we form and depend on are our modern-day villages, but they reach well beyond city limits."[2]

The evidence suggests Clinton can take her thesis further. No family is an Island, and no house is a castle. They are multiply networked. The ways in which modern families are networked provide them with a great deal of individual discretion, abundant opportunities for communication, and flexibility in their togetherness. They spend less time physically together at home in the same room and even in the same house.[3] People network as individuals rather than within solidary family groups. Each household member operates as a semiautonomous individual, with her/his own agenda, using a multitude of transportation services and communication media to contact and coordinate with each other. But while structural changes in North America have centrifugally weakened the physical togetherness of families—for better or worse—multiple communication media links them. Families continue to be thickly connected at any time and anywhere, with in-person contact supplemented by mobile phones and the internet.

Although the trend to networked families began before the internet and mobile phone, the intrinsically *personal* nature of these technologies has encouraged the transmutation of households into networks. Where calls to wired (landline) home phones and visits to homes often were contacts