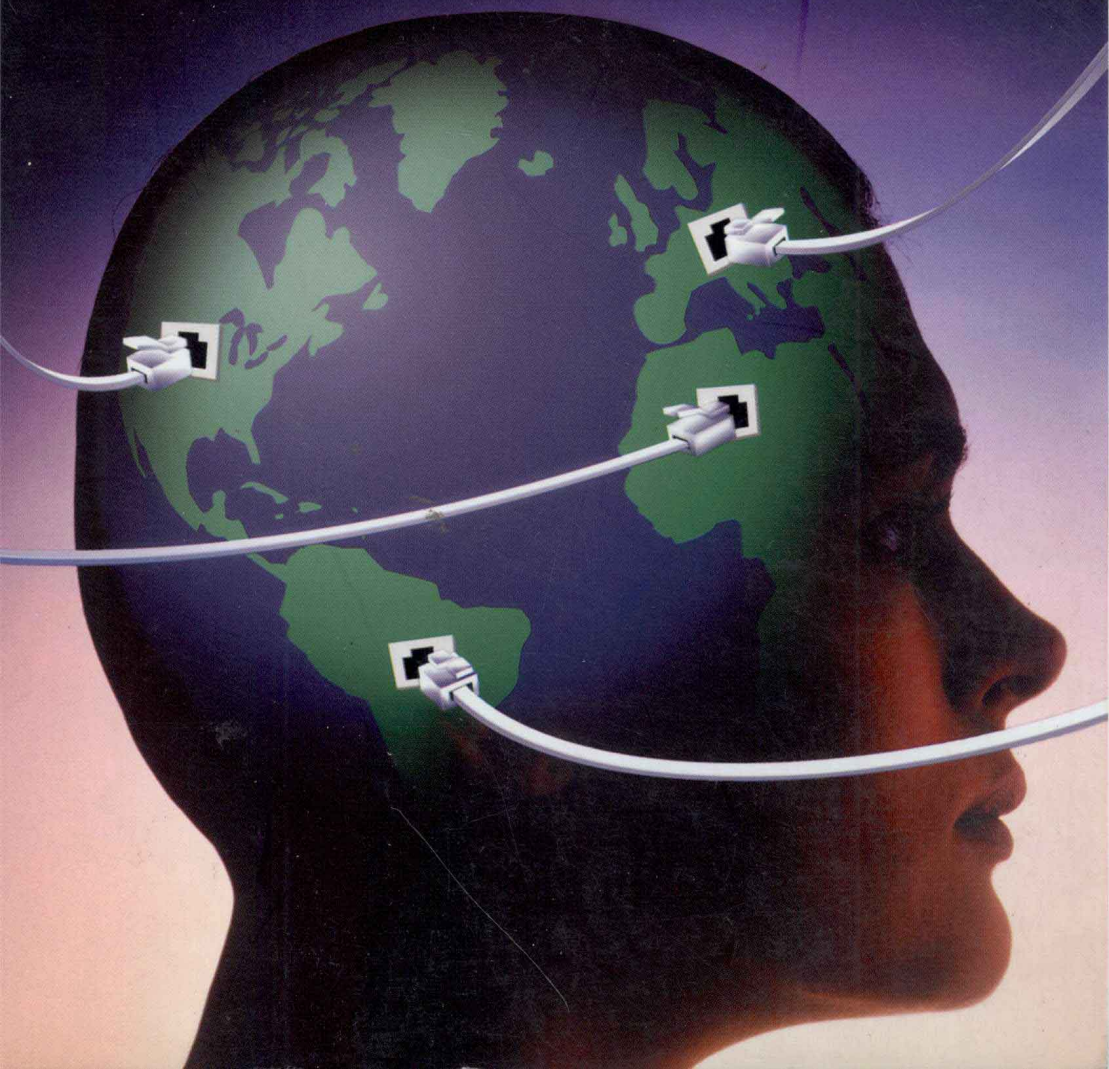# The Psychology of the Internet

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THE PSYCHOLOGY
OF THE INTERNET

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CAMBRIDGE
UNIVERSITY PRESS

PREFACE TO THE PAPERBACK EDITION

"WHAT HATH GOD WROUGHT" were the words transmitted in 1844 to officially inaugurate the telegraph line running from the Supreme Court chamber in Washington to a platform 15 miles outside of Baltimore. Today's Internet generates some of the same debates that the "Victorian Internet" did more than a century and a half ago, in which the promise and perils of an astonishingly capable network are linked to the ways in which we behave when we use it. The goal of telegraph inventors was to transmit intelligence instantaneously across any distance, but for better or worse, the technology quickly became involved in all kinds of human activities, from clandestine romances to stock manipulation schemes.[1] So it is with the Internet.

This book, *The Psychology of the Internet*, examines how we behave when we act and interact online, and why the characteristics of the medium can affect our behavior in surprising and sometimes troubling ways. After the first publication in 1999, the Y2K doomsayers were proven wrong, and for the most part, the world's computer infrastructure survived the transition easily. Technically, the Internet had very little trouble with the cutover, but much has happened recently that highlights the growing importance of the psychological aspects of this Internet environment.

The explosive growth in the number of people online continued, and by mid-2000 estimates topped 350 million. The breathtaking growth was not only in the number of users, however. It was in the expansion of the net's role and capabilities, driven especially by commercial interests and innovations in Internet technologies. These three factors – the growth in

[1] Standage, T. (1998). *The Victorian Internet*. New York: Berkley Books.

numbers, the rise of e-commerce, and the avalanche in netcentric technologies – are combining to transform the Internet environment and its effects on human behavior. We are confronting significant new issues as a result, and though some of them have been around for a long time, the change in scope, scale and speed has catapulted them to the headlines and affected the way people behave when they log on.

One important example involves heightened concerns about privacy, an issue that has been at or near the top of the list for Internet users. The Victorians were also concerned about privacy and used innumerable ciphers to protect messages transmitted via telegraph. For Internet users, though, the scope of the privacy issue goes well beyond encryption.

ONLINE CUSTOMER PROFILING AND PRIVACY

The dramatic rise in commercial activity on the net, combined with some remarkable innovations in Internet technologies, has generated considerable discussion and thought about privacy. Software is widely available to allow Web site hosts to gather information about site visitors and track their behavior – even if they don't buy anything and provide their name, credit card number, and billing address. The growing stockpile of electronic data about the way humans behave online can, in principle, be explored with data mining techniques to provide what corporations hope will become useful psychographic profiles.

Corporations defend the practice of online customer profiling, citing the value of tailored marketing to both company and consumer. A corporation that knows more about you when you drop into the Web site can dynamically present advertisements, coupons, discounts, and other kinds of promotions, focusing on products and services in which you'd be more interested. For the consumer, the use of profiling could reduce the flood of commercial messages, especially about products of little interest, and present special bargains. Targeted marketing did not arrive with the Internet, of course, but the new capabilities have vastly expanded possibilities for profiling, and for collecting and reselling very detailed information about individuals that they might have preferred to keep private.

Doubleclick's troubles illustrate how technology-enabled leaps in the scale and scope of targeted marketing heightened everyone's awareness of Internet-related privacy issues. The online advertising company places invisible images measuring just one square pixel on the sites of its business partners, and each time a person visits any of

those sites, Doubleclick's software code leaves a cookie on the visitor's hard drive, often without the person's knowledge or permission. This technique allows the company to collect information about people *across* Web sites, not just from the behavior they displayed when they visited a single site. Doubleclick acquired Abacus Direct, a national marketing database with details of mail-order catalog purchases from 88 million households. They planned to combine the data contained in it with the information from the online profiling activities, a merger that arguably would have created the most detailed database in existence about the activities of individual consumers. The company dropped the plan in 2000 after a storm of protest and a significant drop in its stock price.

Amazon.com experienced another wave of online consumer protest when they began testing "dynamic pricing." It is very easy to change product prices on the net, and an online retailer can program various algorithms to adjust prices based on any number of factors, from customers' zip codes to time of day. Amazon, however, has an enormous stockpile of information about the buying habits of their 23 million customers and can potentially use their demographic and psychographic profiles to assess factors like ability to pay, loyalty, or level of interest in specific products, and charge accordingly. One customer found he could get a lower price from Amazon for a particular DVD when he stripped his own computer of the cookies that identified him as an Amazon customer. He shared his outrage about such practices on the net, and the company immediately backed off. As I discuss in Chapter 5, Internet-based community protests and group power can be a formidable force.

"Spyware" presents yet another opportunity for collecting information about behavior surreptitiously and using it in ways that are very troubling to consumers. This category covers programs installed on hard drives without the individual's knowledge, often through downloads or through installation of purchased products, that can use the person's Internet connection to "phone home" and send information from the person's computer to the company's Web site. A father in Seal Beach, California, for example, discovered one on his laptop. His daughters had been using educational software on the machine and when he attempted to log on to the net through his business firewall, he learned that a program on his laptop was attempting to transmit data to the software vendor's Web site. Though corporate executives insisted the programs were innocuous, the potential for invasion of privacy is considerable.

Although many people enjoy the convenience and individual attention that may come with profiling and other forms of data collection, others are appalled by the growing power of technology to collect sensitive data that can be so easily disseminated or used in unexpected ways. People are especially concerned when attempts are made to collect data without their knowledge or permission, when companies resell their data without their knowledge, or when companies violate their own privacy policies. Mary J. Culnan and Pamela K. Armstrong at Georgetown University argue that corporations are missing a valuable opportunity by not managing customer privacy issues strategically. In their analysis of survey data, they found that customers were more willing to disclose personal information and have that data used to create marketing profiles when their privacy concerns were explicitly addressed by fair procedures.[2] Unfortunately, the lure of these new technologies and the potential for competitive advantage appear to be so compelling that many companies are blinded to their negative effects on consumer trust.

WORKPLACE SURVEILLANCE

The power that digital networks offer to corporations to profile their customers can also be applied to employees. The American Management Association conducts surveys of major U.S. firms each year about the extent of workplace surveillance, and from 1997 to 2000, the percent of companies who reported that they store and review computer files more than doubled, from 13.7% to 30.8%. Email monitoring rose even more rapidly during this period, from 14.9% to 38.1%. In 2000, the AMA added a new question to gauge how much corporations are monitoring Internet connections. More than half the companies (54.1%) reported that they did some form of surveillance of Internet use.[3]

Corporations cite several reasons for deploying surveillance systems, including the need for general performance reviews. Increasingly, concerns about legal issues lead employers to monitor their employees because companies have been held liable for allowing hostile workplace environments to persist. As I discuss in many places in this book, the

[2] Culnan, M.J., and Armstrong, P.K. (1999). Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation. *Organization Science,* 10(1), 104–115.

[3] American Management Association (2000). 2000 AMA Survey: Workplace Monitoring & Surveillance. Retrieved September 29, 2000, from the World Wide Web: http://www.amanet.org/research/pdfs/monitr_surv.pdf

Internet environment encourages disinhibition, as people interact with one another via their computer screens and keyboards and are more insulated from the direct consequences of their behavior. At Dow Chemical, for example, more than fifty employees were fired because they used email in inappropriate ways, especially to transmit sexually explicit materials.

In her *Guide to E-Mail and the Internet in the Workplace*, Internet law attorney Susan Gindin cautions corporate executives to ensure that their company has a comprehensive Internet use policy in place. It should cover acceptable use, ethics, disciplinary procedures, expectations about monitoring and privacy, and a host of other issues that have surfaced as the Internet became a common feature on employees' desktop computers.[4] Most corporations now have policies in place that address the use of email and other network resources, but the psychological aspects of the email environment are difficult to control – even with corporate edicts. Those fired employees would probably not have used interoffice mail to send glossy photographs around, but email is different.

Email and other forms of Internet-based communication also become tangled with legal issues because messages are usually archived and can be used as evidence in subsequent litigation. People continue to use it in very informal ways, despite the growing mound of cases in which email contains the most revealing admissions.

Another reason organizations are increasingly choosing to monitor Internet use concerns productivity. Personal email and net surfing can be very time consuming, and the attraction of new Internet-related technologies can be extremely high. Now, employees can use their high-bandwidth connections to check their portfolios and trade stocks, compare prices with shopping bots, gamble, compete in hot auctions, and communicate via instant messages with distant relatives. Some reports suggest employees spend an average of five to ten hours per week on personal Internet use.

From a psychological standpoint, the effects of this rapidly growing workplace surveillance are not clear. The software to monitor Internet use is widely available now and very easy to implement, so it is not surprising that so many companies have deployed it. Yet it remains to be seen whether the pros outweigh the cons. Generally speaking, people do not like to be electronically monitored and many have filed suits about inva-

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[4] Gindin, S.E. (1999). *Guide to E-Mail and the Internet in the Workplace*. Corporate Practice Series. Washington, DC: Bureau of National Affairs, Inc.

sion of privacy. Some believe that their use of the fast Internet connection at work to shop or research travel bargains constitutes a positive job benefit. In a tight labor market, a strict policy about Internet use combined with monitoring may turn away potentially valuable employees.

While online profiling and surreptitious data collection endanger trust between businesses and their customers, electronic workplace surveillance may do the same thing between employers and their employees. Privacy may become the civil rights issue of the twenty-first century because of the explosion in netcentric technologies that make online data collection so simple, and its use so tempting. Privacy is not the only issue that gathered so much steam this year, however. The Internet played a major role in another year 2000 clash between commerce and online human behavior. At its center was a software program called Napster.

INTELLECTUAL PROPERTY, NAPSTER, AND PEER-TO-PEER SHARING

The net has always been a place in which intellectual property rights were very challenging to enforce. As I discuss in Chapter 12, the Internet distributes power to individuals and diminishes the power of authorities to control what happens. Software, music, even whole books have been traded and passed around in chat rooms and over email and discussion forums on the Internet for a long time. However, recently developed Internet technologies have vastly increased the scope and scale of this activity and its usability for average computer users. Napster, for example, attracted some 22 million users in a few months and became a household word. Its teenage inventor – Shawn Fanning – found himself in the middle of a tense debate about the nature of intellectual property in the age of the Internet.

Napster is software that people download from the net for free that allows them to swap digital music files stored on each other's computers. Users can search a central database to find where particular titles can be found and then connect to one of the locations to retrieve the file. This distributed musical library maintained on individuals' hard drives around the globe contains both copyrighted and uncopyrighted materials. Exchanging these files became so popular, especially among college students, that Internet traffic jams became common and some universities barred or restricted its use to protect the networks.

Fanning and his infant company are involved in rounds of lawsuits and countersuits with the Record Industry Association of America (RIAA)

and artists such as Lars Ulrich of the rock group Metallica, which may take years to unfold. Napster is not charged with copyright infringement, but with contributory infringement, because the company launched technology that makes it easy for users to infringe. In mid-2000, a U.S. District Court judge ruled in favor of the RIAA and ordered that Napster shut down access to copyrighted material within two days. Just nine hours before the order was supposed to go into effect, an appeals court ruled that the company should be allowed to continue operating. As of this writing, Napster is still up and running.

From a psychological perspective, the Napster episode raises several key issues about the evolving relationship between the Internet and our own behavior. One issue is obviously about intellectual property and copyright laws in the digital age. Clearly, the new technology makes it easier for people to enjoy music at their convenience, without buying a CD. They could do this before, of course, by listening to the radio, taping their favorite songs, swapping MP3 files in chat rooms, exchanging CDs with friends, and other methods. The difference now is scope and scale, and its threats to the economic model of the recording industry and the reward structure for artists. While many people insist that the millions who swap copyrighted music through Napster are guilty of stealing, just as if they shoplifted a CD from a store, others believe that existing laws about sharing such property among individuals are vague. Napster attorney David Boies argues that noncommercial consumer copying has been recognized as fair use by the courts, but the scale of copying and sharing through Napster is clearly unprecedented.

Many Napster users do think they are breaking the law when they take one of the copyrighted songs from a fellow user, but they seem relatively untroubled by any ethical or moral concerns over their behavior – partly because they do not see much harm. From years of psychological research on moral reasoning, it is clear that people definitely consider the extent of harm that comes from a particular act, along with the intentions of the actor, when they make moral judgments. Napster users are also convinced they could never be caught. We are left with a vague law that technological innovation and widespread Internet access have made very easy to evade and that appears to carry scant moral muscle to encourage compliance. A recent article in US News and World Report about the Napster debate, for example, carried the headline "The Empire Strikes Back," suggesting an alignment of the anti-Napster forces with the evil empire from Star Wars and the pro-Napster forces with Luke Skywalker and the rebels.

Napster is just one of the services that facilitate peer-to-peer, distributed information sharing on the net. Several others are already available that have the potential for even more dramatic confrontations with current business models and existing laws protecting intellectual property. Gnutella is a particularly interesting example because it raises other issues about online behavior and group dynamics.

Unlike Napster, Gnutella is not a company and has no central servers or databases. It is a software protocol that creates a decentralized network of peer-to-peer relationships. A session starts with a connection between two peers, then fans out to other peers like a chain letter. A query for a particular file would trigger searches on each of the connected peers until the file is found or a time limit is reached. Also, unlike Napster, the source code for Gnutella applications is widely shared.

Gnutella will generate even more issues involving intellectual property because there is no central database, and thus no entity – like Napster – that could be sued or organized into a fee-collecting enterprise. It also provides means to mask the identity of a peer that generates a query, making users feel even more anonymous online than they feel when using Napster. Gnutella, however, is not a technically efficient way to locate and transmit files, and its use could lead to a tragedy of the bandwidth commons even more than Napster does.

Some research on Gnutella traffic sheds light on the way the system affects group dynamics and demonstrates that the characteristics of this peer-to-peer network encourage considerable free-riding. Eytan Adar and Bernardo A. Huberman of Xerox Palo Alto Research Center examined traffic patterns among more than 31,000 peers over a twenty-four hour period in 2000, during which more than 4 million files were shared.[5] They found that consumers far outnumber providers. More than two-thirds of the peers shared no files at all during this period. A very small number (about 1% of the sample) did most of the providing on this network, responding to about 50% of the queries. To succeed, a large peer-to-peer information sharing network like this would need to have considerable voluntary contribution, in terms of files (and information) and bandwidth. The providers, after all, must sacrifice some speed on their own connections and computers in order to share. However, this study suggests that the perceived anonymity associated with a network like Gnutella may create more free riding than cooperation.

[5] Adar, E., and Huberman, B.A. (2000). Free riding on Gnutella. Internet Ecologies Area, Xerox PARC. Retrieved September 29, 2000, from the World Wide Web: http://www.parc.xerox.com/istl/groups/iea/papers/gnutella/index.html

Anonymity, as you will see in this book, is a key ingredient of the Internet environment for human interaction, and it affects our behavior in predictable ways. Sometimes it unleashes a surprising level of intimacy and self-disclosure, but it can also protect people from the consequences of their actions.

Napster, Gnutella, and their clones raise concerns about copyrights in the digital age and how a society can promote a healthy growth in intellectual and artistic capital. When technology changes the game rules and products are so easily disseminated with no middleman and no royalty payments, will creativity be stifled? These new technologies also raise difficult questions about how to protect a valuable and shared resource. Large-scale environmental movements have made much progress through education, even when enforcement is problematic, partly because they rely on group pressure as well as moral awareness. A homeowner watering her lawn during a drought may never be fined by the county, but she would receive some harsh looks from her neighbors – an even more effective method of ensuring compliance.

THE WEBCAM PHENOMENON

Netcentric innovations threaten our privacy and our conceptions of intellectual property, but they also provide a means to voluntarily abandon both, if we choose. Since the first publication of *The Psychology of the Internet*, the Webcam phenomenon took off with lightning speed and became an international craze, and it shows again how the Internet can support an extraordinary range of human activity and motivations. For a very small amount of money, people can now become producers of their own life dramas and broadcast them on a twenty-four hour basis to the entire world. They can mount a small camera in any room – or all rooms – of their homes, connect the cameras to a computer, and maintain an always-on Internet connection. Visitors to these Webcam sites can refresh the image every few seconds to see what is happening. Databases of Webcam sites now contain thousands of entries, from the practical to the pornographic.

Many Webcam sites are functional and utilitarian, showing traffic patterns at busy intersections or progress on construction sites. However, psychological issues arise when we ask why people would want to create a site that broadcasts their own day-to-day activities from cameras in their homes and why anyone would want to watch. The creators report motives of profit, if they can sell subscriptions or

advertising, or simply a need for attention and a desire to reach out to a global audience.

A large number of these sites are launched by women, individually or in groups, and one of the earliest – jennicam – was created by Jennifer Ringley. The camera watches as she combs her hair, dresses, works at her computer, pays bills, and sleeps. On the surface, it would not seem to be something that would attract many viewers, but it receives millions of hits a week. Viewers can open a small window on their computer screens that refreshes with the latest image every fifteen minutes, and they can subscribe for $15 to step up the refresh rate to once a minute. On the site, visitors can read the journal entries by Jennifer herself, complete with liberal use of smiley faces:) and news of her latest boyfriend. She is eager to add new features to her site, including streaming video, a technology that will allow visitors to see live action and not just a succession of snapshots.

The Webcam can be an extension of the home page described in Chapter 2, in which people focus on their own identities and explore ways to manage their online impressions. Webcams, however, are also real-time so the creators are unable to think through their self-presentation and tinker with it in the same way they would when designing a home page. Exhibitionism is one ingredient for many Webcam creators, and some freely admit and cherish this aspect of their Internet activity. The desire for attention, to be noticed, is another driving motivation, though the attention is certainly not always positive. Most women creators, for example, become the target of harassment and hate mail. In Chapter 6, I discuss the nature of online aggression and why the Internet environment can escalate it.

Why do people visit Webcam sites, become involved in the lives of the creators, and join their fan clubs? One email received by New York City freelance writer Gabrielle, creator of the GabGab Webcam site that features her own apartment and editorials, showed clearly that the visitors often don't know themselves: "I just came across this whole web cam thing. I find it interesting despite the lack of ... well everything. I can't turn it off. Why do you think that is?"

One explanation is that the visitors have an opportunity, not just to observe the endless life details of another human being from a safe distance, but to watch that person's life move along without any editorial reviews or constraints, any time of day or night. Anything can happen on live Web cams, and visitors hope for that big surprise. The stars of the Web cam sites usually share more intimacies of their lives through

online journals, chats, and discussion forums, so the viewers become more involved and even interact with the person they watch on screen. These differences take voyeurism a step further than the way it unfolds on soap operas or even on the wildly popular "reality TV" show *Survivor*.

Gabrielle helps people start up their own Webcam sites for profit or other reasons, and the technology is now easily available and inexpensive. The Webcam phenomenon demonstrates that the privacy issues raised by the growing power of Internet technologies are complicated ones that from the standpoint of human behavior may seem contradictory. Central to the concerns, however, are control and choice. Chapter 9 explores the way the Internet offers people who have a strong internal locus of control many options for exercising it. Increasingly, it also provides an expanding variety of tools that can diminish people's ability to control.

SHIFTING PATTERNS OF INTERNET USE

As e-commerce expanded and more netcentric technologies rolled out, the way people use the Internet and what they use it for have changed. Much of what we know about patterns of use has come from self-selected samples, such as the people who choose to complete the annual World Wide Web surveys conducted by the Graphics, Visualization, and Usability Lab at Georgia Tech. Conclusions from such surveys must be tentative because of sampling biases. For example, people who are very involved in the Internet are more likely to run across such Web-based surveys, so their behavior and attitudes would be overrepresented. Recently, Norman H. Nie and Lutz Erbring of the Stanford Institute for the Quantitative Study of Society made an important contribution to our understanding of Internet use in the United States by conducting a survey with a randomly selected sample of households.[6] Each selected household was equipped with a WebTV settop box and given free Internet access and email accounts. The survey results are based only on the responses from people who had Internet access independent of their WebTV equipment.

A key finding was that email was overwhelmingly the most widespread activity among Internet users, with more than 90% reporting that

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[6] Nie, N. H., and Erbring, L. (2000). Internet and society: A preliminary report. Stanford Institute for the Quantitative Study of Society. Retrieved June 1, 2000, from the World Wide Web: http://www.stanford.edu/group/siqss/Press_Release/Preliminary_Report.pdf

they used the technology. People are exchanging emails with their coworkers, friends, and family members, and also with businesses, educational institutions, teachers, government representatives, former classmates, long lost relatives, and total strangers. After this book was first published, I received emails from all over the world from people who offered many examples of how the net affects their behavior. Clearly, the widespread use of email via the Internet demonstrates that communication is a central feature of this technology, though it was not in its infancy. There appears to be no phrase analogous to "WHAT HATH GOD WROUGHT" for the history books to document the net's inaugural use for human communication. Instead, an early demonstration of ARPANET in 1972 focused on resource sharing and its use to access computer applications across a network, such as meteorological models, chess games, and the software program called ELIZA that simulates a therapist. Michael S. Hart, one of the net's early users, described the bleak communication environment in an email to Janet Abbate, author of *Inventing the Internet:* "You have to realize how FEW people were on the Net before the '80s... There just weren't enough to support a conversation on any but the most geeky or the most general topics ... It was boring, unless you could "see" down the cables to the rest of the world ... and into the future."[7]

Email remains primarily text-based and asynchronous, and as you will see in this book, those characteristics have important effects on human interaction and impression formation. The "send" button is much easier to use than an envelope, stamp, and trip to a mailbox, but email is very easily misdelivered, forwarded to unintended recipients, or copied and quoted out of context. The communication style remains mostly informal and conversational, despite the flurry of litigation in which emails thought to be private were actually archived, resurrected, or monitored in some other fashion. Increasingly, tools are available to track the origin of emails even when the sender takes measures to remain anonymous. Joan Feldman, president of a computer forensic company in Seattle, reported that it was rather easy to track down people who were posting messages critical of their companies through alias email accounts. She simply called the Internet Service Provider and asked for the real name of the person who used that account.

Email traffic now outpaces phone traffic, and even when a phone call or face-to-face encounter is possible, many people choose email to com-

[7] Abbate, J. (1999). *Inventing the Internet.* Cambridge, MA: The MIT Press.

municate. This indicates that email is not just a poor cousin to other forms of communication with greater media richness that is used only when others are unavailable. Despite its drawbacks, it has significant advantages and has become a preferred method of communication for many people. I often send a letter when contacting a colleague I've never met in person, but often I receive no reply. Then I send the same thing via email and receive a reply within a couple of hours, with apologies for missing the snail mail that could remain unread for weeks.

Other findings from the Nie and Erbring study indicate that people are taking advantage of many of the growing services on the Internet and using them for a wide variety of activities. Most use the net to obtain general information about products and services, to read, to engage in hobbies, and to explore travel options. While more than a third had purchased something online, the actual volume of online transactions between business and consumers is still quite small. More than a third of the sample said they used their Internet access for entertainment, by playing games such as chess, cards, or role-plays.

The new financial services are becoming especially popular, with more than a quarter of the sample using the net to check stock prices. Smaller numbers were using the net for online banking (12%) and trading stocks (7%), but these services are relatively new and are likely to grow quickly. Overall, the average Internet user engaged in more than seven different activities.

The study also pointed to ways in which our use of time is changing as a result of the Internet. For example, the more hours people spend on the Internet each week, the less they use the mass media – especially TV. Also, increased Internet use cuts into time spent on outside activities and talking with friends and family by phone. Earlier, some research suggested that more Internet use could be leading to increased levels of social isolation, in which people might be substituting weaker ties with virtual acquaintances for the stronger ties of family and friends (see Chapter 9). However, more research is needed on this because it is not clear whether people are replacing phone contact with email or other forms of electronic communication, particularly if they have just one phone line.

Another time-related issue involves the increasingly fuzzy boundary between work and nonwork. With Internet access to email and corporate networks from home, hotels, shopping malls, airports, and beach cafes, people appear to be extending work to time slots that were ordinarily exempt in the past. For example, Nie and Erbring found that

15% of the respondents who were employed full or part time reported an increase in the amount of time they spent working at home. The general increase in connectedness, through cell phones, voice mail, pagers, and wireless devices adds more ways in which we can continue working outside the office, regardless of whether we are officially called "teleworkers."

Another significant trend involving the way netcentric technologies are changing how we use time involves wireless text-messaging via handheld devices. These services are exploding in Europe and Japan, especially among the young, and their growth rate came as a surprise to nearly everyone. Though Internet access, information, financial services, games, and other applications are available, most of the use is for interpersonal communication.

With a properly equipped cellular phone, an individual can use the keypad to type in a short text message and send it to a single individual or a predefined group. In Japan, the DoCoMo cell phones with Internet access are emerging as the biggest consumer boom since the Walkman. Schoolchildren use their phones to send each other messages during long, boring subway rides or send messages home to inquire about dinner. Thomas L. Friedman, *NY Times* Foreign Affairs Correspondent, described watching one of the schoolgirls use her phone on a train: "Her thumb moved around the keyboard with the lightning dexterity of a Midori playing a violin concerto."[8]

In Europe, short text messaging services are growing in popularity as well, and businesspeople use them as an unobtrusive way to communicate with others when they are sitting in meetings or conference presentations and have time to spare. This is one reason why the services are likely to continue to gain popularity. There are many moments during a day, away from a desktop computer, that could be productively, or at least amusingly, filled with a quick bit of interpersonal communication that would not disrupt others in the way that cell phone conversations do.

From a psychological standpoint, these services create a new Internet-based environment for human interaction that will have its own characteristics and will influence the way we behave when we use them. A phone call already has a defined set of norms associated with it, and increasingly, so does email. The norms that evolve are affected by the nature of the communication medium and by the tendency toward group conformity, as you will see in Chapter 5. These wireless

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[8] Friedman, T.L. (2000). Brave new world. *The New York Times,* September 22, 2000. Retrieved September 22, 2000, from the World Wide Web: http://www.nytimes.com/2000/09/22/opinion/22FRIE.html