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Embedded Media

Who We Know, What
We Know, and Society Online

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Within the developed world, members of the current generation are experiencing political, economic, and cultural life through a set of communication technologies barely older than they are. This collection of research about society online is unique. Rather than trying to cover every possible topic relating to new communication technologies in society, we have organized a series of arguments about how these new technologies mediate the various spheres of our social lives. First, the collection is not devoted exclusively to a particular technology or to the internet specifically; rather, it is devoted to a range of technologies and technological possibilities labeled *new media* (Manovich, 2000). Obviously, the label *new media* cannot last forever, but many observers use the term to describe a range of communication technologies very different from the media that were prominent a decade ago. Second, this collection does not mark the importance of new media in everyday life with indications that the technology is a banal ordinary part of our daily activities. Different people have different kinds of access to new media, and those with access use new media in

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different ways. The technology itself and how it is used evolve daily, so it makes sense to focus on the general properties of new media and their application in both daily and unusual circumstances. Third, this collection has an overarching argument. Communication technologies became deeply embedded in personal lives very quickly, mediating our interactions with other people and the way in which we learn about our world. Understanding society online requires that we study media embeddedness—how new communication tools are embedded in our lives and how our lives are embedded in new media.

New media technologies have not simply diffused across society; rather, they were rapidly and deeply embedded in our organizations and institutions (Howard, Jones, & Rainie, 2001). The content of new media tends to more closely reflect the actual interests of the population, which plays the role of producer and consumer of content, software, and hardware. For example, some people use new media to produce music at home, others use commercial software to organize and store purchased music, and still others use software to make their music collections available to their networks of family and friends. The technology itself is deeply embedded in that its software and hardware can be controlled by, and often developed by, users of the new media. In contrast, a relatively small social elite owns, manages, produces, and channels information through media such as television, radio, and newspapers.

Studying Society Online

RESEARCH METHOD

Several of the chapters in this collection are good examples of how methodological diversity can lead to better understanding about the role of new media in our lives. Two kinds of lessons about how to research the relationship between technology and society emerge. First, we must better evaluate the ways in which communication tools constrain and empower research. Witte does this in the prologue in describing how sample design constrains research when it is part of the explanation for findings, and Bainbridge (Chapter 19) takes advantage of the new media as a powerful research tool in his experiment with online survey instruments. Second, we must better evaluate the way in which conceptual tools—metaphors and categories—help and hinder our explanations of what we find when we present our research. Both Shade (Chapter 4) and Nakamura (Chapter 5) illustrate how the survey instruments can give an incomplete

rendering of gender online. The same may be said for race, class, and the other forms of social inequality that get replicated online when some people have better access to new media tools than do other people, when some people know how to use new media better than do other people, and when some people find more affinity with the cultural content of new media than do other people. As Shade argues, researchers not only must study the way in which social inequalities are replicated online but also must build projects to redress these inequalities. Content creation, education, civic engagement, policymaking, and governance are the key ways in which to do this.

Witte argues that researchers should not confine themselves to telephone-based survey samples given that many people use a variety of communication technologies for their daily tasks. Because the sampling error of traditional random digit dial surveys is growing, and because the chance that someone will not be invited to participate is not randomly distributed across the population, the social sciences need to surrender the unquestioned goal of randomness for the more meaningful and achievable goal of representativeness and purposive sampling. If the distribution of people who do not respond to a survey is the same as the distribution of people who do respond, then all is well. However, nearly 5% of the adult U.S. population is simply inaccessible to most telephone surveyors: people in prisons, health care facilities, soup kitchens, college dormitories, and the military as well as people who can pay for technology that protects them from computer-assisted telephone interview (CATI) systems. Witte's piece is an important introduction to this volume because he cogently makes the case for multi-method studies:

Telephone surveys with their own patterns of nonresponse and selection may give an inaccurate picture of Web users. The virtues of multimethod studies may extend to covering the blind spots of telephone surveys as well as those of Web surveys.

New media permit researchers to experiment with a range of respondent stimuli and the survey instrument itself. By extension, the process of triangulating on answers necessarily partners qualitative, comparative, and quantitative methods (Howard, 2002).

As editors, we have deliberately sought out examples of the diverse methods that scholars are using to study society online. Silver and Garland (Chapter 10) conduct a systematic content analysis of magazine advertisements, and Rice and Katz (Chapter 7) use the comparative method to contrast data about politics

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online in 1996 and 2000. Hargittai (Chapter 16) uses quasi-experimental methods and does probit analysis of her results. Norris (Chapter 2) and Robinson, Neustadtl, and Kestnbaum (Chapter 15) use ordinary least squares regression techniques. Stromer-Galley (Chapter 6) does logistic regression. Griswold and Wright (Chapter 13) hold small focus groups. Larsen (Chapter 3), Schneider and Foot (Chapter 9), and Bainbridge (Chapter 19) work with means and cross-tabs, having developed unique archiving methods for analyzing large volumes of Web site content. Shade and Nakamura analyze survey results. Dessauer (Chapter 8), Neff and Stark (Chapter 11), and Kotamraju (Chapter 12) report the findings of their ethnographic and autoethnographic work. Peterson and Ryan (Chapter 14) use historical methods in their study of evolving music technologies. Starke-Meyerring, Burk, and Gurak (Chapter 17) do a comparative analysis of policy traditions. Witte and Bainbridge treat new media themselves as a research tool.

These core arguments and challenging questions are grouped by the community, political, economic, cultural, personal, and global spheres of life in which we all participate:

- Social capital, community, and content
- Wired news and politics online
- Economic life online
- Culture and socialization online
- Personal and Global Context of Life Online

Data from many prominent social science projects studying new media are represented in this collection: the General Social Survey, the HomeNet Study, the National Telecommunications and Information Administration, the Pew Internet and American Life Project, the Stanford Institute for the Quantitative Study of Society, the Survey2001 Project, the UCLA Center for Communication Policy, the Webarchivist.org, and the World Values Survey. The core arguments in this volume are strengthened by the fact that the contributors use their various disciplinary interests and methods to triangulate on answers to some of the most challenging questions about the role of new media in society.

SOCIAL CAPITAL, COMMUNITY, AND CONTENT

Norris (Chapter 2) starts off Part I of this volume by testing out the role of various kinds of online community groups if one knows their ability to help

bridge and bond people from other backgrounds. Bridging and bonding are the two key components of Putnam's (2000) formulation of social capital, and Norris finds that most Americans feel that their membership in online communities both widens and deepens their social relationships. As one might expect, Norris finds that different kinds of groups have different bridging and bonding roles and that such roles can be socially constructive or dysfunctional. She takes us beyond simple propositions that internet-based communities are good for those who find camaraderie or are bad for those who isolate themselves in narrowly defined interest groups. Her cogent analysis allows us to compare the relative effects of various kinds of groups. For example, Norris finds that religious groups seem to have a modest bonding function but a low bridging function.

The role of new media in our spiritual lives is understudied, so Larsen (Chapter 3) gives us a closer look at religious communities online, investigating both the organization of religion and individual spiritual conduct online. The internet, she notes, "is a space at once both solitary and social." Some new media technologies such as the internet have been criticized for encouraging small groups with narrow specialized interests to form and flourish. Her findings suggest that the internet has provided a fertile ground for spiritual exploration and that having a place for religious artwork, debates about canonical law, and devotional support has enriched the lives of many people deliberately looking for guidance and like-minded spiritual communities. The internet has helped these spiritual communities to organize themselves, extend their services, and expand their memberships. In a nice convergence with Norris, Larsen finds that although people recommend their favorite Web sites to friends, *reinforcing* social networks, people rarely go online to *extend* their social networks of devout friends.

People with different demographics backgrounds look for different kinds of content online (Howard et al., 2001). For example, African American internet users more frequently seek spiritual information online. Although the proportion of male and female users reflects that of the total population, the different genders do different things with new media. Women are twice as likely to search for health information than are men, and they tend to spend more time communicating with friends and family through e-mail. They are less likely to get news, visit government Web sites, or use the internet for work. Controlling for other variables, women are less likely to research or buy products online. Shade (Chapter 4) explores the implications of the recent surge of female internet users. To what degree has the content—or the technology itself—been feminized by the surge of female users that occurred as the technology defused? Shade suggests

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that a balanced analysis must look at both corporate interests in supplying gendered content and user demand for such content. We can safely say that all content is political. Nakamura (Chapter 5) discusses both how racial categories are represented by the content of new media and how racial minorities are excluded from the use of the technology. Many internet users may be able to extend their social capital by bridging or bonding with new communities and ideas. However, the content of new media is not free of cues about race, gender, or class or about forms of social inequality we find in life offline.

WIRED NEWS AND POLITICS ONLINE

Although many pundits have lauded new media technologies for their potential roles in democratic deliberation, there is quite a difference between imagining how a technology might play such a role, building such applications, and getting the public to use them as desired. To open Part II, Stromer-Galley's (Chapter 6) analysis of what people think of voting online offers insight into the complexities of the transition between technological dreams and political applications. She finds that an internet voting system, as currently imagined, would probably not draw new voters into participating. She charts a careful route between being technologically overdetermined and being sociologically overdetermined. On the one hand, she learns that internet use is a strong predictor of preferences for voting online; we might expect that because as more people are using the internet, the number of people who would like to vote online is increasing. On the other hand, familiarity with a technology bears little relationship to a person's sense of duty or interest in politics. With her research, we can now make a measured distinction between the degree to which a technology may enable more efficient voting participation and the degree to which people must be motivated to vote. Overall, being familiar with new media appears to have a greater effect on the likelihood of voting online than on having a strong sense of duty to do so.

Whereas Stromer-Galley investigates people's perception of internet voting tools and finds marked enthusiasm for their use, Rice and Katz (Chapter 7) conduct a comparative study of the role of the internet during the 1996 and 2000 elections. They report that a growing number of people use the internet to enrich their political lives—participating in online discussion groups, researching candidates and policy options, and following political news. They also make the important point that it is too early to expect any rise in voter sophistication, and they offer reasons as to why the internet may have only a limited role in making

people smarter citizens. In weighing the question of whether the internet has had a negative impact, no impact, or a positive impact, Rice and Katz crunch the numbers and arrive at a mildly positive ruling. Dessauer (Chapter 8) writes about the evolution of the production and consumption of news: "With the evolution of internet news, the traditional news product has become either the basis for a story that is 'repurposed' or repackaged for new media." The habit of news production has changed radically; journalists conduct more research online than many are willing to admit in professional circumstances, television news has adapted interactive techniques to engage television viewers, and some internet users treat personal Web logs (or "blogs") as alternative news sources. Moreover, there is a growing industry of alternative media production that relies on the efforts of solitary individuals equipped with handheld computers, digital cameras, and wireless technologies to bear witness to political violence that established media consider too controversial for their prime-time viewers. Whereas Dessauer describes changing patterns in the production and consumption of news in the United States, Schneider and Foot (Chapter 9) take a close look at a specific case of how the internet was used in a moment of social crisis. They make one of the first systematic studies of internet use following the terrorist attacks of September 11, 2001, covering its use as an emergency response tool for getting and providing information, assistance, and support; as a means of sharing personal expression; and as a forum for political advocacy.

ECONOMIC LIFE ONLINE

Even though themes of gender and race are introduced in the section on community and content, they are not sequestered there. To begin Part III, Silver and Garland (Chapter 10) investigate how advertisers tried to influence the technology choices of young women. Whereas advertisers wanted teenage girls to see the internet as an easy way in which to shop, teenage girls were interested in chatting with instant messaging (IM) tools. Silver and Garland's piece is interesting for the way in which it describes the tension between individual agency and social construction—girls who want to IM and an advertising industry that wants them to shop.

But advertisers have not been the only ones *doing* the "social construction" of new media. In fact, such work just became defined as a valuable skill set during the past decade, and Kotamraju's (Chapter 12) project is to trace the evolution of Web design skills. Focusing on the San Francisco Bay area, her story of professionalization and rationalization brings perspective to the "dot-com" boom and

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bust that involved, and often preoccupied, a generation of young people and an international economy of billion-dollar technology businesses. Although Kotamraju's case study teaches us that the meaning of the professional Web designer has changed over time, Neff and Stark (Chapter 11) suggest that the designers of new media technology have had lasting organizational influences. As a complement to Kotamraju's case of micro-level changes in professional definition, Neff and Stark describe how software and hardware choices influence organizational behavior. They find that "the values embedded in widely used information technologies have become encoded into the routines of the market and into organizational forms." The stock *value* of many dot-coms inflated and deflated over several short years, but the *values* embedded in new organizational forms seem to be long lasting.

CULTURE AND SOCIALIZATION ONLINE

Griswold and Wright (Chapter 13) and Peterson and Ryan (Chapter 14), in the opening chapters to Part IV, wrestle with two general hypotheses about patterns of cultural consumption and production over new media. The first is a kind of *more-more* hypothesis: The more time people spend with technologies such as the internet, the more they will learn about culture—reading literature and listening to music, either online or offline. The second is a kind of *zero-sum* hypothesis often associated with studies of reading behavior, playing video games, and watching television: The more time people spend watching television, the less time they spend reading or listening to music. Does this apply to new media use? Griswold and Wright take a close look at reading behavior and internet use and make some modest claims about positive reinforcement—not just association—between the use of internet technologies and the consumption of literary culture offline. Peterson and Ryan examine how musical tastes may be changing with the exposure offered to various cultures. They provide a significant amount of historical and archival depth that is important for their probe into the role of new media in shaping the way in which we produce and consume music. Their thesis is that with the advent of new technologies, from notational innovations to recording and distributing technologies, music has been *disembodied* from its creators.

But in terms of socialization and cultural sophistication, do people really meet new people and learn new things online, or do they merely extend and reify their existing social networks and personal interests? Robinson, Neustadt, and Kestnbaum (Chapter 15) find that, independent of education, age, and other

demographic factors, internet users *are* more open and tolerant folk. The first internet users tended to be wealthy, educated, and more conservative, but Robinson finds something of a demographic and ideational transition happening online. One cannot use standard labels, such as liberal and conservative, to describe many internet users; instead, Robinson and his colleagues plumb the subtle variations in the issues on which internet users seem to be increasingly tolerant.

PERSONAL AND GLOBAL CONTEXTS OF LIFE ONLINE

Whereas the previous sections focus on social phenomena within the United States, contemporary life online also has a personal and global context. The personal context of life online consists of not only the hardware and software to which we have access individually but also our personal skills with new media. Some of the best contemporary data on the digital divide appear in the contributions from Rice and Katz (Chapter 7) and Robinson, Neustadt, and Kestnbaum (Chapter 15), but Hargittai (Chapter 16) digs into a kind of *second-order* learning divide. In the opener to Part V, she finds that personal skills with new media vary widely but that a significant portion of the variation in how long it takes people to complete a search online can be explained by the type of information being sought, their schooling, and the presence of children in the household. We rely heavily on our social network both for learning new skills and for getting suggestions on the kinds of content to explore. As Starke-Meyerring, Burk, and Gurak (Chapter 17) add, not only do skills vary widely, but so do privacy norms. To be more accurate, individuals seem to have strict privacy norms but little knowledge of how to protect their privacy online. Conversely, many corporations have less regard for our privacy expectations because transparent markets—and competitive edge—require knowledge about our preferences as consumers. Starke-Meyerring and her colleagues identify three approaches to the management of individual privacy and compare and contrast the European model of state-led protections, the American model of corporate self-regulation, and a model of citizen management.

This is one example of how the personal context of life online, our individual research skills and privacy expectations, has a difficult fit with the global context of life online, a world of competing corporations and nation-states vying for our business and trying to protect our interests. Sassen (Chapter 18) writes about other ways in which personal and global contexts connect in her piece on how sited digital materials move. She wrestles with the conceptual challenge of

studying communication technologies that both construct new social dynamics and reproduce old ones, constraining some human activities while providing capacity for others. Part of the solution, she argues, lies in making sure that the study of life online includes the territorial context in which users actually live.

Whereas Stromer-Galley (Chapter 6) investigates social expectations for polling technologies, Bainbridge (Chapter 19) takes a much broader look at expectations for the future through scenarios about how new media will *stay* new. However, he does so in an interesting way. Rather than presenting many people with short, mutually exclusive statements about the future, he takes one respondent and offers many different scenarios. He takes advantage of new media, turning the internet itself into a research tool, and presents more than 2,000 scenarios to a *single* respondent, asking for careful distinctions between what the respondent *expects* and *wants* from the communications technologies to come. Bainbridge presents the results of the Question Factory, a unique project that turns traditional survey research on its head. Rather than asking a large number of people to choose from a small range of responses to questions limited by survey designers, the Question Factory asks one person to generate the widest possible range of responses to the questions deemed important.

Cross-Cutting Themes

Even though this collection has been explicitly organized around these different spheres of life—community, political, economic, cultural, personal, and global—there are two implicit themes that cut through the collection. The first has to do with the commercialization of life online. The second has to do with what we call the demographic transition online.

CONSUMERISM, COMMERCIALIZATION, AND COMMODIFICATION ONLINE

For those who study new media and society, one of the most pernicious claims is that the content of new media has been spoiled by consumerism, commercialization, and commodification. One question more frequently asked of internet users is whether they feel that the technology has improved their ability to shop. The statistics tell us that being older predicts a negative response and that even though being female is a slightly positive predictor, it is not statistically significant, so we cannot generalize about whether women feel like better

shoppers because of new media (Howard et al., 2001). When Silver and Garland (Chapter 10) do their analysis of the relationship between the interests of young teen women and the goals of the teen advertising industry, they find that female teens have been intent on using IM and have resisted advertisers' efforts to construct new media as a shopping tool. Women tend to look for information about health care and dealing with other kinds of life problems. But does having more content about health and welfare on the internet represent some kind of feminization? Shade (Chapter 4) tackles that question. One of the most pronounced negative effects is racial categories, such that people who self-describe as being part of a racial minority clearly do not feel empowered by new media technologies. Such tools do not make African Americans, Asian Americans, or other minorities feel as though they are smarter shoppers, more equipped in the workplace, or better able to pursue hobbies or interests. However, other research suggests that minorities are more likely to use the internet for political activism and spiritual information (Howard et al., 2001). Both Shade and Nakamura (Chapter 5) wrestle with the question of whether engendering content and making it racially reflective is or should be a commercial enterprise. Kotamraju (Chapter 12) writes about the commodification of skills, a process that promotes raw coding and systems administration skills over artistic design skills among Web site creators.

Even though this is a collection of chapters from social scientists leading research into the role of new media in society, there are a number of points of disagreement. For example, whereas Shade and Nakamura comment on signs of the commercialization of racial identities and gendered content, Silver and Garland find that advertisers failed to lure teen girls into treating the Web as a shopping tool. Similarly, Neff and Stark (Chapter 11) report on a minor revolt when the teen users of an online magazine asserted the right to participate in the editing and design of the Web site. Thus, researchers find consumerism, commercialization, commodification, and powerful acts of resistance in society online. Two of the most forward-looking pieces may have contradictory implications. Whereas Bainbridge's (Chapter 19) respondent predicts that voting online will happen by 2100, Stromer-Galley (Chapter 6) makes a number of cautionary notes about the important social context in which online voting would be socially acceptable and logistically practicable. These points of disagreement signal that although we are learning much about society online, crucial questions about the political, economic, cultural, personal, and global contexts of new media inspire vibrant debate and require innovative research.

DEMOGRAPHIC TRANSITION ONLINE

One of the key hypotheses of demography is called the demographic transition—that all societies go from a stage of growth in which they are made up mostly of young people to a stage in which they are made up mostly of old people. We observe a similar demographic transition online. There are many people who do not use the internet and other new media tools, but their numbers are dwindling. Of the group of people who are not online, some are eager and just waiting for costs to drop. Many of the rest are reluctant to come online or say that they never will, but this group gets older and smaller every year (Lenhart, 2000). In this sense, the proportion of people familiar with new media is ever growing. Not only are most college students now quite familiar with the internet, but the number of people who must use the internet as part of their job profiles is also increasing (Jones, 2002). Yet even those who do claim familiarity with new media tools such as the internet might not always have regular access, as Rice and Katz (Chapter 7) and Robinson, Neustadt, and Krestnbaum (Chapter 15) remind us; might not have the best research skills, as Hargittai (Chapter 16) finds; and may participate in the consumption of cultural content but not in its production, as Nakamura (Chapter 5) illustrates.

But it is not enough to state that the older folks who are unfamiliar with technology are diminishing in numbers. It is more useful to estimate trajectory—to figure out the direction of social currents. The principle of generational turnover has important implications for our study of the internet and society. For Peterson and Ryan (Chapter 14), the next generation of internet users will have diverse musical tastes. For Shade (Chapter 4) and Nakamura, the internet may be feminized and racially representative. Rice and Katz find a modest political role for new media during the 1996 and 2000 elections, Stromer-Galley (Chapter 6) analyze survey data about voting habits and find that a growing number of people would prefer to vote online, and Bainbridge's (Chapter 19) in-depth study finds an interesting set of expectations about new media and politics:

The general public will have ready access to government information and services over their computers. The internet will be an agent for democracy, as each community will have an electronic town hall. Voting will be done online via personal computer. Internet-based voting will dramatically strengthen democracy. The selection of leaders will be done via electronic media, without paper ballots or voting booths. Citizens will vote from home

by computer on daily and weekly issues which are raised by their elected representatives.

It is not simply that expectations for new media are high but that the social context of technology development only partly explains patterns of use. Stromer-Galley finds that internet use is the strongest predictor of a person's interest in voting online. She is one of the first to measure these effects in a comparable way. However, the effect of being a savvy internet user is greater than one's sense of duty or political interests, suggesting that the popular expectation for being able to conduct our political business online will grow only as the technology diffuses. Robinson and his colleagues confirm that as people get more and more experience with new media technologies, they seem to be more tolerant of other ideas. This is very different from the claim that has been made for some time—that the people online are also the more educated, richer, and more tolerant elites of the country. This is a tentative claim about causality—that the internet seems to make people more tolerant. The importance of these advancements cannot be understated. For a long time, scholars were cautious about discussing internet effects, and it was assumed that the golden age of “netizenship” passed when the masses started signing up for America Online. But several of these contributors are making nuanced, albeit bold, claims: People manage their social networks, learn about various cultures, and become more tolerant *as they spend more time online*. We used to be able to say that internet users had more social and cultural capital before they came online (e.g., more income, more education) and that was why internet users seemed like such sophisticated and tolerant people. It turns out that there are some observable threshold effects in the relationship between technology and tolerance: Controlling for things such as education and income, people who use new media seem to become a more sophisticated and tolerant bunch.

To what degree do the people who use the internet become more tolerant, giving sensitive responses to questions of social controversy? The degree of tolerance appears to be a simple function of exposure to new media technologies. In this volume, we learn that people who use the internet read more; tend to discover new literature, music, and other forms of culture; tend to work in interesting organizational patterns that take advantage of knowledge networks; tend to find community online, building their social capital by bridging and bonding various kinds of community; and query political and news content as it interests them. To what degree are these changes causally related?

Who We Know and What We Know

The literature on new media and society has often tried to explain internet users' political, economic, or cultural sophistication by the year they began using new media technologies. For survey researchers, the question "When did you come online?" was the best proxy for technological savvy. The assumption was that the early users were in sophisticated military, scientific, or economically elite circles and were more likely to have extensive social networks, altruistic motives, and technological savvy. In contrast, our contemporary contributors explore the connection between all of these positive attributes and how much time is spent online during an average day—a much better proxy for user sophistication. We already know that the people who started using new media were the wealthier and more educated people in the country—cultural omnivores, in Peterson and Kern's (1996) words. Because it appears that the interesting relationship is between the average number of hours spent online in a week and all of these positive attributes, we can hypothesize that the benefits of familiarity with new media accrue to those who are, well, familiar with new media. In other words, someone who came online only recently and invests a significant amount of time taking advantage of new media tools may enjoy the benefits as much as does the tech-savvy "old guard" who started using bulletin board systems during the late 1980s. Confirming this relationship with panel studies and time series should be next on the research agenda. For now, we have good data about how we ourselves perceive the role of new media in our lives. These data let us control for the effects of experience online—either how many years ago people started using the internet or how much time people spend online during an average day.

People seem to think that new media technology improves their social and cultural capital. Social capital can be defined as *who we know*, and cultural capital can be defined as *what we know*. People report feeling that new media technology has allowed them to solidify and extend their social networks and to expand their understanding of cultural, political, and economic matters. The contributors to this collection offer a number of important caveats and cautionary notes, and they use a variety of methods and data sources to flesh out their arguments. But a unique data series from the Pew Internet and American Life Project sheds some light on how many people felt about the role of new communication tools in their lives at the turn of the 21st century. In this panel, a sample of people were first interviewed in March 2000 and then again a year later.¹ Tables 1.1 and 1.2 present

Table 1.1 New Media and Who We Know: Odds (e^b) of Responding Positively to Questions About Relationships to Family and Friends, Modeled With Demographics, Status, and Experience Online

	All Respondents				Internet Users			
	Yesterday, did you:		When you need help, would you say that you can turn to:		Connections to your friends?		How much, if at all, has the internet improved your:	
	Call a friend or relative just to talk?	Visit with family or friends?	Many people?	Just a few people?	Hardly any people?	Connections to your family?	Connections to your family?	Your ability to meet new people? ^a
Constant	1.158	3.086**	0.898	0.703**	0.119**	0.119**	.068**	0.044**
Age	0.993**	0.988**	0.990**	1.003	1.010	0.972**	0.938**	0.980**
Gender (female)	2.491**	1.544**	1.719**	0.766**	0.578**	1.364**	1.372**	1.088
College degree or more	0.892	0.881	1.118	1.068	0.587**	1.836**	1.464**	1.245
\$50,000 or more	1.102	1.104	1.139	1.003	0.729*	1.217*	1.357**	1.064
Hispanic	1.070	0.703**	0.606**	1.150	1.803**	0.937	0.724	1.030
Race (white as reference category)								
African American	1.547**	0.572**	0.476**	1.279*	2.448*	0.794	0.796	0.725
Asian American	0.777	0.365**	0.406**	1.897**	1.035	0.935	1.057	0.384
Other	1.012	1.139	0.989	0.801	1.416	0.827	0.681	0.494
Revisited in 2001	0.977	0.894	1.063	1.036	0.893	7.924**	7.026**	—

(Continued)

Table 1.1 Continued

	All Respondents				Internet Users			
	Yesterday, did you: Call a friend or relative just to talk?	Visit with family or friends?	Many people?	Just a few people?	Hardly any people?	Connections to your friends?	Connections to your family?	Your ability to meet new people? ^a
When came online (nonuser as reference category)								
During the past 6 months	1.040	1.080	1.002	1.244	0.675	—	—	—
1 year ago	1.087	1.136	1.109	1.114	0.563**	3.100**	2.965**	2.611***
2 or 3 years ago	1.106	1.192	1.154	0.965	0.705*	3.242**	3.425**	2.029**
More than 3 years ago	1.407**	1.106	1.304**	0.866	0.790	4.107**	3.607**	1.485
N	71	502	1,736	1,649	397	702	814	111
Nagelkerke R ²	.077	.044	.059	.013	.074	.339	.296	0.048

SOURCE: Pew Internet and American Life Project (www.pewinternet.org).

NOTE: Overall, there were 5,036 completed surveys, 1,501 of which were collected in the callback survey. In most models, the amount of explained variation is less than 30%, although the models still make statistically significant improvements to the predictive power of baseline odds alone.

a. These questions were only asked only in the callback survey.

*Significant at .05 level. **Significant at 0.01 level.

the results of logistic regressions for several dependent variables modeled with the following independent variables: age, gender, educational background, income, time of interview, ethnicity, race, and when they came online. Although it is common to report the coefficients from the logistic regression of independent variables onto dependent variables, the exponentiated coefficients are the more intuitive “odds ratios.” An odds ratio is the probability that one variable, controlling for all of the other factors in a model, will predict a person’s positive response to a question. For example, all other things being equal, the odds that a female respondent called a friend or relative just to talk are 149.1% greater $[(2.491 - 1) * 100]$ than the odds that a man would have called a friend or relative. Moreover, it is possible to predict particular responses to questions such as “Yesterday, did you call a friend or relative just to talk?” For example, a 30-year-old woman with a B.A. degree who does not use the internet, earns less than \$50,000 a year, and self-identifies as African American but not Hispanic would probably have responded positively (the odds are 118.6 to 1 in this sample). In contrast, if this respondent had reported using the internet for more than 3 years, she would very likely have responded positively (the odds would increase to 166.8 to 1 in this sample).²

NEW MEDIA AND WHO WE THINK WE KNOW

Overall, people who join society online believe that they know more people as a result. Table 1.1 illustrates some of the ways in which people have extended their social networks. These models predict a person’s positive responses to a number of questions while controlling for several demographic factors. The table shows some of the questions that were asked of all respondents and some that were asked of internet users specifically. Of the statistically significant variables, being younger decreases the likelihood that someone telephoned a friend or relative to talk (because the odds are less than 1:1 [i.e., 0.993:1]), whereas being female, being African American, or having come online more than 3 years ago greatly increases that likelihood (because the odds are 2.491:1, 1.547:1, and 1.407:1, respectively). Of the statistically significant variables, being younger, Hispanic, African, or Asian American decreases the likelihood that someone visited family or friends, whereas being female increases that likelihood. Even though most of the categories about when someone came online are not statistically significant, their positive direction suggests that people who use the internet are probably in greater contact with their family and friends than are nonusers. Because the

question about how many people a respondent can turn to can be modeled three ways with the three different response options, we have a more nuanced picture of how people who use the internet *feel* more connected. The older a person is, the fewer people that person feels he or she can turn to for social support. However, being female significantly increases the likelihood that a person feels he or she can turn to many people. Having a college degree or an annual family income of at least \$50,000 decreases the chance that a person feels he or she can turn to hardly any people. In contrast, being Hispanic, African, or Asian American increases the odds that a person feels he or she can turn to only a few people or hardly anyone. Most interesting for our purposes, people who have more experience online were less likely to choose the *hardly any people* option, and more likely to report feeling they can turn to *many people*, than were nonusers.

But several questions about social life were put specifically to internet users. Of the statistically significant variables, being older decreases the likelihood that a person will feel that the internet has improved his or her connections to friends and family or improved his or her ability to meet new people. In contrast, being female, having a college degree, and having an annual income of at least \$50,000 increases the odds that a person will feel more connected to friends and family because of the internet. However, the single largest effect lies with the fact of being reinterviewed a year later. In other words, after a year of using the technology, people were seven times more likely to say that connections to their friends and family had improved as a result of using the internet since their first interview in March 2000.³ Statistically, the enthusiasm increases the longer a person has been using the technology. Compared with new users who had just started using the technology during the past 6 months, those who had been using it for more than a year were at least three times more likely to say that the internet had improved their social connections. Similarly, more experienced users were twice as likely to report that the internet had improved their ability to meet new people.

NEW MEDIA AND WHAT WE THINK WE KNOW

Overall, people who join in society online think that they know more things as a result. Table 1.2 illustrates some of the ways in which people garner information. Many people watch television news or read newspapers on a daily basis. Being older, having at least a college degree, having an annual household income of at least \$50,000, being part of the sample that was resurveyed in 2001, or having experience with the internet increases the odds that a respondent either watched television news or read newspapers on a daily basis. In contrast, being

female or a racial minority other than African American or Asian American decreases these odds. Being African American increases the odds of having watched television news on a daily basis, but as with being Hispanic, it decreases the odds of having read newspapers on a daily basis. Internet users with more experience seem to spend more time staying connected to daily news through notably non-internet media than do nonusers.

For those who use the internet regularly, Table 1.2 illustrates that the strongest predictors of how a person feels about new media technology is the amount of time he or she has had to grow familiar with the technology, either during the year since the person was last surveyed or over the course of several years of regular use. These odds ratios are useful in allowing us to compare effects. For example, they tell us that whether respondents feel that the internet has improved their ability to do their jobs depends much more on whether or they have a college degree than on whether they have an annual household income of at least \$50,000. This suggests that what we get out of new media technology depends more on our education than on our income level. Furthermore, having a college degree or a high family income may double the odds that a person feels that the internet has improved his or her ability to manage personal finances, but the effect of having come online more than 3 years ago is four times as great. In other words, having more than 3 years experience is a better predictor of how someone feels about managing his or her finances online than is whether that person is well educated or has much money to manage.

Conclusion: The Embedded Media Perspective

Some scholars debate whether new media such as the internet are mass media. The internet is increasingly commercialized, just like other mass media, and 55% of households in the United States were online at the turn of the 21st century. Others frame new media technologies as personalized, tailored, user-driven media. But a more useful analytical frame emerges across contributors in this volume—an embedded media perspective. This collection has an overall argument about how people actually perceive the relationship between new media technology and their quality of life, and this broad argument is grounded in what people actually perceive this role to be. Millions of people who use new media find them deeply embedded in their lives, whether the uses involve encoding new organizational forms in the market, building new kinds of activism in the

Table 1.2 New Media and What We Know: Odds (e^b) of Responding Positively to Questions About Managing Information, Modeled With Demographics, Status, and Experience Online

	<i>All Respondents</i>					<i>Internet Users</i>				
	<i>Yesterday, did you:</i>					<i>How much, if at all, has the internet improved your ability to:</i>				
	<i>Watch a news program on television?</i>	<i>Read a daily newspaper?</i>	<i>Shop?</i>	<i>Get information about health care?</i>	<i>Manage your personal finances?</i>	<i>Learn about new things?</i>	<i>Do your job?</i> ^a	<i>Deal with problems in your life?</i> ^a	<i>Pursue your hobbies or interests?</i> ^a	
Constant	0.416**	0.142**	0.099	0.032**	0.046**	.217**	0.060**	0.033**	0.074**	
Age	1.025**	1.032**	0.960**	0.985**	0.972**	0.964**	0.985**	0.984**	0.993	
Gender (female)	0.947	0.782**	1.104	1.565**	0.783	0.978	1.220	1.559**	0.953	
College degree or more	1.072	1.647**	1.607**	1.519**	1.892**	1.809**	2.595**	1.827**	1.384**	
\$50,000 or more	1.076	1.551**	1.931**	1.244	2.279**	1.481**	2.275**	1.526*	1.617**	
Hispanic	1.083	0.728*	0.973	1.291	0.892	0.924	0.599	0.878	0.600	
Race (white as reference category)										
African American	1.451**	0.604**	0.681	1.139	0.904	0.927	0.508*	0.610	0.504**	
Asian American	0.902	0.768	1.786	0.967	1.441	1.104	0.120*	0.248	0.379	
Other	0.737*	0.680*	0.492*	0.947	0.679	0.874	0.790*	0.489	1.004	
Revisited in 2001	1.275**	1.164*	8.230**	6.830**	5.225**	8.705**	—	—	—	

All Respondents		Internet Users						
Yesterday, did you:		How much, if at all, has the internet improved your ability to:						
Watch a news program on television?	Read a daily newspaper?	Shop?	Get information about health care?	Manage your personal finances?	Learn about new things?	Do your job?	Deal with problems in your life?	Pursue your hobbies or interests?
When came online (nonuser as reference category)								
During the past 6 months	1.107	1.100	—	—	—	—	—	—
1 year ago	1.332*	1.160	2.267**	1.967**	3.418**	1.354	1.678*	1.917**
2 or 3 years ago	0.940	1.261*	2.128**	1.551**	3.509**	1.442*	1.615*	2.140**
More than 3 years ago	1.229*	1.165	4.242**	4.243**	3.114**	1.305	1.827**	1.522**
N	359	849	493	313	501	301	152	340
Nagelkerke R ²	.061	.14	.308	.230	.238	.365	.118	.069

SOURCE: Pew Internet and American Life Project (www.pewinternet.org).

NOTE: Overall, there were 5,036 completed surveys, 1,501 of which were collected in the callback survey. In most models, the amount of explained variation is less than 30%, although the models still make statistically significant improvements to the predictive power of baseline odds alone.

a. These questions were asked only in the callback survey.

*Significant at .05 level; **Significant at .01 level.

political landscape, or experimenting with culture in ways that are exciting and new yet deeply ingrained in both the biases and beauties of social life offline. New media are more socially embedded than traditional mass communication technologies because users often produce and consume content *and* can design the software and hardware technology itself. Traditional media do not permit this fast dynamic production, consumption, and redesign.

In economic sociology, the term *embeddedness* has been used to describe the important ways in which market mechanisms are grounded in social contexts, not behaving as idealized rational, transparent, bias-free tools for exchange (Granovetter, 1985; Uzzi, 1996). In this volume, many contributors take what we suggest is an *embedded media perspective* by researching how new media mechanisms are also culturally laden tools for communication grounded in social contexts.⁴ The embeddedness theme emerges from Larsen's (Chapter 3) piece. She finds that traditional media do not present the full spectrum of spiritual life, whereas new media create homes for this rich variation because they are embedded in the rich variety of ideas and aspirations of our communities. New media are not greedy as television is, according to Griswold and Wright (Chapter 13). New media are not exclusive media demanding all of our attention and are more deeply embedded in our day—coexisting with other technologies that save and consume our time in the day. In this sense, new media are embedded in the context of both traditional media and traditional technologies. For example, contemporary news programming frequently references Web site content, and Web sites increasingly archive full video news actualities. Dessauer (Chapter 8) finds that new media content is embedded in both internet and television technologies, such that distinctions are difficult if not meaningless. However, she does suggest that, as a society, we may be sacrificing local and network television news for online news. Dessauer and Schneider and Foot (Chapter 9) discuss blogging, through which some people document their personal experiences while other people treat them as reference sources. Embedded media link each other. Hargittai's (Chapter 16) focus groups reveal that one's ability to use new media technology is deeply embedded in the context of his or her family's information-gathering skills. For Neff and Stark (Chapter 11), the interesting story of the new economy is not so much the crash of the overvalued dot-com businesses as the more lasting and deeply embedded effects on organizational structures and logistics. They discuss several cases in which users play the role of both producers and consumers of content, a kind of distributed construction that occurs across communities of users. Similarly, Kotamraju (Chapter 12) writes about

the embedding of a profession—from a loosely defined category of artsy Web site development skills to a well-codified set of programming skills. Sassen (Chapter 18) writes about the conceptual challenges of writing about digital materials that are territorially embedded.

The process of embedding new media in our social relations, and of embedding social relations in the media, need not be speedy or automatic. Stromer-Galley (Chapter 6) and Rice and Katz (Chapter 7) note that new media such as the internet have no direct or exclusive role in shaping political outcomes, so it is difficult to find how our individual or group behavior may be changing. Stromer-Galley suggests that the growing proportion of people comfortable with the new media, those for whom new media are ubiquitous technologies, are most likely to see them as useful tools for exercising franchise. In fact, the process of embedding media is a competitive one, as Silver and Garland (Chapter 10) illustrate with their example of teens who want to use IM and advertisers that want teens to shop. But ultimately, new media are also embedded in our economic and cultural lives because many of our economic transactions, and much of our daily work and cultural consumption, occur online. Shade (Chapter 4) and Nakamura (Chapter 5) note that minority and feminine cultures are weakly embedded online and that the champions of this process are looking for ways in which to profit by bringing offline cultures online. Starke-Meyerring, Burk, and Gurak (Chapter 17) remind us that privacy issues, and the privacy technologies available for our use, are embedded in legal institutions in *multiple* jurisdictions. They, like Sassen, develop stories about the way in which our technologies and the digital materials we compose both are locally sited and have global span. In this way, Sassen adds to the argument that digital technologies are embedded in global politics, but we posit that many digital technologies are more deeply embedded in our lives than are traditional media. Traditional media did not faithfully display Zapatista grievances to the world; it was left to new media to play that role (Garrido & Halavais, in press). Whereas television stood alone, sometimes providing background noise to the day with static content, it competed with books and music for our attention. Embedded media are networked, deliver dynamic content, and allow us to produce our own, holding multiple forms of textual, aural, and visual cultural content. As Griswold and Wright (Chapter 13) and Peterson and Ryan (Chapter 14) frame them, the zero-sum arguments about competing media might not apply precisely because the technology is deeply embedded in our lives. We develop personalities online, and our personalities develop online. Cyberspace becomes a powerful cultural icon of its

own, and prominent social organizations become dependent on new media for day-to-day operations.

FIT, STATUS, AND LINK

An embedded media perspective is a powerful analytical frame for describing the way in which new media are deeply set in our social and personal lives. The embedded media perspective assesses the capacities and constraints of social life online by three measures: fit, status, and link (Table 1.3). First, in terms of *fit*, embedded media suit our daily routines without requiring our exclusive attention or demanding new habits. They are immersed in the background of our lives, and in engineering jargon, the applications and tools of new media are extremely *sticky*. Media that fit well with existing social habits become deeply entrenched, difficult for us to give up, and fixed mediators of our social interaction. Moreover, we seem quick to give up communication technologies that are ill fitting and not easily embedded in our daily lives. Second, in terms of *status*, embedded media situate us as both producers and consumers of political, economic, and cultural information. New information technologies often tax our skill set, but we use media to the best of our ability to improve our social status and quality of life. Our ability to integrate digital media in our lives may be partly explained by race, gender, education, income, and other attributes, and the attributes of larger communities may explain how digital media are integrated in community life. By design, embedded media can help us form (or hinder us from forming) our own political opinions, become smarter consumers, or learn about other cultures. Third, in terms of *link*, these technologies connect different spheres of our lives more efficiently and effectively than do traditional media. We work at our home computer and do our personal business over the workplace internet. We can quickly learn about the global consequences of personal actions. Data about our policy preferences and shopping habits equally influence political positioning and commercial advertising campaigns. We use these technologies to manage our strong and weak links to other members of society.

For researchers, the analytical frame of an embedded media perspective offers several advantages. First, the embedded media perspective requires that the level of analysis we choose to take is local and immediate. We must examine how people use technology in their immediate social contexts. Taking a rational actor approach with general surveys will reveal something about *users*, but other methods are needed to dig deeply into the context of life online. Moreover, people have much more control over embedded media than they do over traditional

Table 1.3 The Embedded Media Perspective: Investigating the Individual and Social Contexts of Life Online

		<i>The Social Context of Embedded Media</i>	
		<i>Capacity</i>	<i>Constraint</i>
	<i>Fit</i>	What capacity do technologies have for fitting into the daily routines of our social lives?	How do less ubiquitous, ill-fitting technologies restrict the daily routines of our social lives?
<i>The Individual Context of Embedded Media</i>	<i>Status</i>	What production or consumption capacity do technologies have for enriching our political, economic, and/or cultural lives?	What constraints do technologies place on our production or consumption of information about politics, economics, and/or culture?
	<i>Link</i>	How do technologies enable us to link to who or what we want to know?	What constraints do technologies place on our ability to link to who or what we want to know?

media. New media users act deliberately when they choose to produce and consume tools and content, but their choices may structure the constraints and capacities of new media later on. The embedded media perspective explains why trust is so prevalent online. We trust the information we find ourselves, we trust online news sources and companies with good reputations offline, and we trust new organizational forms that use new media. Despite the wide-ranging access that new media communication tools provide, people still prefer to interact with the people they know and trust.

Second, the embedded media perspective takes the position that communication tools provide both capacities and constraints for human action and that individual users are responsible for taking advantage of capacities and overcoming constraints in daily use. Thus, people are not simply solitary rational actors or extensions of their terminals as Castells (1996) or Nie and Erbing (2000) might suggest, nor are they exclusively social beings unencumbered by the limits of technology as Barlow (1996) might suggest. There is mutual structuration; technological use patterns conform to relations in a personal network, but the habits of personal networking adjust to the communication tools available. Witte (prologue) and Bainbridge (Chapter 19) take advantage of new media embeddedness by building a more nuanced survey instrument. Whereas traditional media force respondents to choose from a range of options preselected by researchers,

embedded new media can offer multiple cues and allow respondents to reveal genuine preferences (Zaller & Feldman, 1992).

We argue here that these new technologies have been deeply embedded in multiple spheres of life—cultural, political, and economic—such that the global and personal contexts of our lives are fitted together and tightly linked. The central project of this collection is to assess the life of society online. Arguing that people *feel* more connected and *think* they know more things is different from trying to establish that people are more connected and do know more things. However, establishing how society feels about its online interaction is an important introduction to research by some of the world's leading social scientists exploring the role of new media in society in terms of how people feel, think, and act.

Notes

1. The survey was conducted using a rolling daily sample, with a target of completing 75 to 80 interviews each day of a survey period. For results based on the total sample, one can say with 95% confidence that the error attributable to sampling and other random effects is ± 2.5 percentage points. For more on survey methodology, go to www.pewinternet.org or see Howard and colleagues (2001).

2. In the first example, the odds = $1.158 * 0.993(\text{Age}) * 2.491(\text{Female}) * 0.892(\text{B.A.}) * 1.102(\text{Income}) * 1.070(\text{Hispanic}) * 1.547(\text{African American}) * 0.777(\text{Asian American}) * 1.012(\text{Other}) * 0.977(\text{Revisited in 2001}) * 1.040(\text{During past 6 months}) * 1.087(\text{1 year ago}) * 1.106(\text{2 or 3 years ago}) * 1.407(\text{More than 3 years ago})$, and because $e^{(0)} = 1$, the odds = $1.158 * 0.993(30) * 2.491(1) * 0.892(1) * 1 * 1 * 1.547(1) * 1 * 1 * 1 * 1 * 1 * 1 = 118.6$. In the second example, the only difference is that the respondent reports having used the internet more than 3 years ago, so the odds = $1.158 * 0.993(30) * 2.491(1) * 0.892(1) * 1 * 1 * 1 * 1.547(1) * 1 * 1 * 1 * 1 * 1 * 1 * 1.407(1) = 166.8$.

3. It is possible that some of this can be attributed to an instrument effect in that people were flattered at being revisited or eager to sound positive about the internet for the internet and American Life Project.

4. At the time of this writing, news agencies began referring to the placement of journalists within mobile military units in Iraq as “embedded journalism.” This label—and this phenomenon—fits with the notion of media embeddedness in that the journalists could do their fieldwork only if they were equipped with the latest satellite video phones. Technologies such as these allowed journalists to be entrenched in the immediate context of soldiers at war, allowing audiences to “experience” life on the front lines.

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