

Making new media make sense

When faced with a new communication medium, the immediate challenge for scholars, users, and non-users is to make sense of it. What is it good for? What are its risks? What benefits might it bring? I once asked students to brainstorm what hopes and fears the internet raised for them. Among other things, they hoped the internet might facilitate new connections, cross-cultural interaction, more social support, and tighter family ties, but they feared losing face-to-face interaction as well as the rise of false relationships, deception, stalking, and new levels of vulnerability to strangers. To understand new media and their potential consequences, we need to consider both the technological features of a medium and the personal, cultural, and historical presumptions and values those features evoke.

In chapter 1, I raised the notion that new media cause cultural anxieties, and articulated several technological concepts that help us to think about how new media may differ from earlier forms of communication as well as from one another. Most anxieties around both digital media and their historical precursors stem from the fact that these media are interactive. Especially in combination with sparse social cues, interactivity raises issues about the authenticity and well-being of people, interactions, and relationships that use new media. Other anxieties arise out of the temporal structure of digital media, which seem to push us toward continuous interaction. The internet's ability to store and replicate information without regard to its content leads to fears about what that content might include and how this power might be abused in harmful ways. The mobility of some new media means that we can now have conversations when we are in public that would have once been held in our homes and that we can

be with others wherever we are, feeding into a related set of concerns about privacy and companionship.

In addition to technological qualities, social forces also shape the anxieties we have and the questions we pose about new communication technologies. This chapter explores the messages that circulate around new media in order to show how social forces influence technological interpretation and use. New media appear in the stories we tell each other about what happened during our day and in the domestic squabbles over whose turn it is to use the computer. They are represented in mass media, where technologies play starring and peripheral roles in news stories, magazine articles, films, and television shows. Popular films such as *You've Got Mail* or *The Net*, both released shortly after the internet became popular in the USA, provide modern-day fairy tales that serve as cultural referents for understanding online romance or identity theft. The film and subsequent television show *Catfish* has become a touchstone that frames concerns about online deception. In *Her*, a man falls in love with his device's artificial intelligence, symbolizing concerns that machines could be more attractive than humans. The messages in popular media, examples of which we'll see below, show the social elements we bring to understanding new communication technologies and help to shape how people understand and design new technology.

Through communication, people assign symbolic meanings to technologies. The messages we communicate about technology are *reflective*, revealing as much about the communicators as they do about the technology (Sturken & Thomas, 2004). When we communicate about digital media, we are communicating about ourselves, as individuals, groups, and societies. As we represent these unfamiliar interpersonal tools through our words, conversations, stories, metaphors, images, and so on, we collectively negotiate what interpersonal relationships are and what we want them to be. When we talk about technology, we are sharing "the visions, both optimistic and anxious, through which modern societies cohere" (2004: 1). In addition to telling us about a medium, communication about technology is also one of the best places to see "the desires and concerns of a given social context and the preoccupations of particular moments in history" (2004: 1).

Communication about technology is also productive, generating new meanings for technologies, new uses of technologies, and even new technologies (Sturken & Thomas, 2004). As early as the sixteenth century, there was an urban legend about “sympathetic needles” that allowed people to communicate instantaneously across distance, a legend that helped to inspire the telegraph (Standage, 1998). William Gibson’s 1984 science fiction novel *Neuromancer* gave us the term “cyberspace,” and both his writings and those of Neal Stephenson, especially the novel *Snow Crash* (1992), provided models of virtual worlds such as Second Life that were developed in their aftermath. Hannu Rahaniemi’s novel *The Quantum Thief* (2010) serves us a future in which people wear “entanglement rings,” share a collective “exomemory,” and can protect their privacy by activating “guvelot” which makes them appear blurry to observers and the exomemory. When the book’s hero receives a message from his girlfriend through his ring, he muses: “sending brain-to-brain messages directly through a quantum teleportation channel seems like a dirty, invasive way to communicate” (2010: 38). This sounds fantastical until one realizes that prototypes of technologies that allow people to control computers through thoughts already exist, developers are hard at work on rings that display messages, and Facebook and Google already function as proto-exomemory.

When people explain the consequences of a new medium in terms of technological or social forces, or some combination of these, they rely on theoretical assumptions about causality. This chapter is organized around the major theoretical frameworks for understanding the causal flow between technology and society. There is a strong tendency, especially when technologies are new, to view them as causal agents, entering societies as active forces of change that humans have little power to resist. This perspective is known as *technological determinism*. When media are new, most popular messages about them are deterministic. A second perspective, the *social construction of technology*, argues that people are the primary sources of change in both technology and society. The *social shaping* perspective sees technology and society as continually influencing one another. Ultimately, over time, people stop questioning individual technologies. Through a process of *domestication*, they become taken-for-granted parts of

everyday life, no longer seen as agents of change. In the remainder of this chapter, we'll look at each of these four perspectives, drawing on rhetorics of technologies old and new to illustrate how they work.

Technological determinism

Machines change us

In a widely read essay in the *Atlantic* (2008), Nick Carr posited that Google is “making us stupid.” Before discussing other people’s stories and neuroscience, he described his own dumbing down:

Over the past few years I’ve had an uncomfortable sense that someone, or something, has been tinkering with my brain, remapping the neural circuitry, reprogramming the memory. My mind isn’t going – so far as I can tell – but it’s changing. I’m not thinking the way I used to think. I can feel it most strongly when I’m reading. Immersing myself in a book or a lengthy article used to be easy. My mind would get caught up in the narrative or the turns of the argument, and I’d spend hours strolling through long stretches of prose. That’s rarely the case anymore. Now my concentration often starts to drift after two or three pages. I get fidgety, lose the thread, begin looking for something else to do.

As Carr tells it, “someone, or something,” changed him. He was the passive recipient transformed by an outside force. As he himself articulates, Carr’s essay is in keeping with a long-standing tradition of technological determinism in which the technology is conceptualized as an external agent that acts upon and changes society.

A year after Carr worried that Google was sapping our intelligence, widespread news coverage of a forthcoming academic lecture compared Facebook’s ability to “enhance intelligence” with Twitter’s power to “diminish it.” The UK paper the *Telegraph* (Cockroft, 2009) described University of Stirling memory expert Tracy Alloway’s take on how asynchronous and synchronous interaction online differentially affect the brain:

Sudoku also stretched the working memory, as did keeping up with friends on Facebook, she said. But the “instant” nature of texting, Twitter and YouTube was not healthy for working memory. “On Twitter you receive an endless stream of information, but it’s also very succinct,” said Dr Alloway. “You don’t

have to process that information. Your attention span is being reduced and you're not engaging your brain and improving nerve connections."

Problematic as they may be, concerns like this should not be dismissed. However, they should be understood in the theoretical and historical context of the reception of new technologies. Popular visions of new technology have tended toward technological determinism as far back as Ancient Greece. In *Phaedrus*, Socrates (Plato, c.370 BCE) decried the invention of the alphabet and writing as a threat to the oral tradition of Greek society (Ong, 1982). Anticipating what his nation's newspapers would write more than 2,000 years later (Koutsogiannis & Mitsikopoulou, 2003, to whom we will return in the next chapter), Socrates, paraphrasing an Egyptian God, warned the inventors of the alphabet:

this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. The specific which you have discovered is an aid not to memory, but to reminiscence, and you give your disciples not truth, but only the semblance of truth; they will be hearers of many things and will have learned nothing; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality. (Plato, 2008 [360 BCE]: 69)

The language and forms of evidence may have changed, but the concern that communication technologies make us dumber is as old as writing. There is, as Lynn Spigel (2004: 140) put it, a "compulsion to repeat the same ideas, even as the society itself has noticeably changed." Reading books such as Marvin's *When Old Technologies Were New* (1988), *The Victorian Internet* (Standage, 1998), or Fischer's *America Calling* (1992) about the telephone's early days, the parallels between today's discourse, especially about the internet, and earlier rhetorics of technology are striking.

There are several variants of technological determinism. One, often linked to thinkers such as Canadian media theorist Marshall McLuhan, who coined the phrase "the medium is the message," is that technologies have characteristics that are transferred to those who use them. Claude Fischer calls this an "impact-imprint" perspective in which technologies change history by transferring "their

essential qualities” to their users, imprinting themselves on users’ individual and collective psyches (1992: 10). Fischer uses the example of Meyrowitz’s influential book *No Sense of Place* (1985), which argued that, because physical and social spaces are separated through electronic media, people who use them lose their own sense of place. Arguments that the rapid-fire editing of current television film creates short attention spans, or that playing violent video games leads to violent behavior, represent other takes on this perspective. Seen this way, “a technology enters a society from outside and ‘impacts’ social life” (Fischer, 1992: 12).

Such direct effects of technology may be strongest when a technology is new because people do not yet understand it. Rather than “using” it, people may be “used by it” (Fischer, 1992: 12). Direct effects are also tied to thinking of technologies in a simplistic way: the more you use them, the more they use you, and the more you are influenced by them. For instance, many studies of internet use, some of which will be addressed in chapters 4 and 6, measure time spent online, divide people into heavy and light users, or users vs. non-users, and then correlate that measure with outcome variables such as loneliness or time spent with family. What a person was doing online is not addressed, collapsing such diverse activities as keeping in touch with one’s mother, banking, researching political information, and looking at pornography into a single causal agent: The Internet.

In a milder form of technological determinism, media choice, technological features are seen as having direct consequences, but people are seen as making strategic, and usually rational, choices about which media they use for differing purposes. According to this perspective, “individuals will effectively employ media whose inherent characteristics are congruent with task demands” (Fulk, Steinfeld, Schmitz, & Power, 1987: 531). A later variant of this perspective, niche theory, developed by John Dimmick (2003), argues that different media allow for different exchanges of resources. For instance, instant messaging “appears to be for contacts with friends late at night while at home,” while the landline phone is “for contacts made while at work” (Dimmick, Feaster, & Ramirez, 2011: 1278).

From a media choice perspective, change happens at an individual rather than societal level. By extension, this means that people are

THE ART OF LETTER-WRITING IS FAST DYING OUT. WHEN A LETTER COST NINE PENCE, IT SEEMED BUT FAIR TO TRY TO MAKE IT WORTH NINE PENCE ... NOW, HOWEVER, WE THINK WE ARE TOO BUSY FOR SUCH OLD-FASHIONED CORRESPONDENCE. WE FIRE OFF A MULTITUDE OF RAPID AND SHORT NOTES, INSTEAD OF SITTING DOWN TO HAVE A GOOD TALK OVER A REAL SHEET OF PAPER.

THE SUNDAY MAGAZINE

1871

IT IS, UNFORTUNATELY, ONE OF THE CHIEF CHARACTERISTICS OF MODERN BUSINESS TO BE ALWAYS IN A HURRY. IN OLDEN TIMES IT WAS DIFFERENT.

THE MEDICAL RECORD

1884

WITH THE ADVENT OF CHEAP NEWSPAPERS AND SUPERIOR MEANS OF LOCOMOTION ... THE DREAMY QUIET OLD DAYS ARE OVER ... FOR MEN NOW LIVE, THINK AND WORK AT EXPRESS SPEED. THEY HAVE THEIR MERCURY OR POST Laid ON THEIR BREAKFAST TABLE IN THE EARLY MORNING, AND IF THEY ARE TOO HURRIED TO SNATCH FROM IT THE NEWS DURING THAT MEAL, THEY CARRY IT OFF, TO BE SULKILY READ AS THEY TRAVEL ... LEAVING THEM NO TIME TO TALK WITH THE FRIEND WHO MAY SHARE THE COMPARTMENT WITH THEM ... THE HURRY AND BUSTLE OF MODERN LIFE ... LACKS THE QUIET AND REPOSE OF THE PERIOD WHEN OUR FOREFATHERS, THE DAY'S WORK DONE, TOOK THEIR EASE ...

WILLIAM SMITH, NORLEY:
ANCIENT AND MODERN

1886

CONVERSATION IS SAID TO BE A LOST ART ... GOOD TALK PRESUPPOSES LEISURE, BOTH FOR PREPARATION AND ENJOYMENT. THE AGE OF LEISURE IS DEAD, AND THE ART OF CONVERSATION IS DYING.

FRANK LESLIE'S POPULAR MONTHLY, VOLUME 27

1890

INTELLECTUAL LAZINESS AND THE HURRY OF THE AGE HAVE PRODUCED A CRAVING FOR LITERARY NIPS. THE TORPID BRAIN ... HAS GROWN TOO WEAK FOR SUSTAINED THOUGHT.

THERE NEVER WAS AN AGE IN WHICH SO MANY PEOPLE WERE ABLE TO WRITE BADLY.

ISRAEL ZANGWILL, THE BACHELORS' CLUB

1891

THE ART OF PURE LINE ENGRAVING IS DYING OUT. WE LIVE AT TOO FAST A RATE TO ALLOW FOR THE PREPARATION OF SUCH PLATES AS OUR FATHERS APPRECIATED. IF A PICTURE CATCHES THE PUBLIC FANCY, THE PUBLIC MUST HAVE AN ETCHED OR A PHOTOGRAVURED COPY OF IT WITHIN A MONTH OR TWO OF ITS APPEARANCE. THE DAYS WHEN ENGRAVERS WERE WONT TO SPEND TWO OR THREE YEARS OVER A SINGLE PLATE ARE FOR EVER GONE.

JOURNAL OF THE INSTITUTE OF JAPANESE, VOLUME 1

1892

SO MUCH IS EXHIBITED TO THE EYE THAT NOTHING IS LEFT TO THE IMAGINATION. IT SOMETIMES SEEMS ALMOST POSSIBLE THAT THE MODERN WORLD MIGHT BE CHOKED BY ITS OWN RICHES, AND HUMAN FACULTY DWINDLE AWAY AMID THE MILLION INVENTIONS THAT HAVE BEEN INTRODUCED TO RENDER ITS EXERCISE UNNECESSARY.

THE ARTICLES IN THE QUARTERLIES EXTEND TO THIRTY OR MORE PAGES, BUT THIRTY PAGES IS NOW TOO MUCH. SO WE WITNESS A FURTHER CONDENSING PROCESS AND, WE HAVE THE FORTNIGHTLY AND THE CONTEMPORARY WHICH REDUCE THIRTY PAGES TO FIFTEEN PAGES SO THAT YOU MAY READ A LARGER NUMBER OF ARTICLES IN A SHORTER TIME AND IN A SHORTER FORM. AS IF THIS LAST CONDENSING PROCESS WERE NOT ENOUGH THE CONDENSED ARTICLES OF THESE PERIODICALS ARE FURTHER CONDENSED IN THE DAILY PAPERS, WHICH WILL GIVE YOU A SUMMARY OF THE SUMMARY OF ALL THAT HAS BEEN WRITTEN ABOUT EVERYTHING.

THOSE WHO ARE DIPPING INTO SO MANY SUBJECTS AND GATHERING INFORMATION IN A SUMMARY AND SUPERFICIAL FORM LOSE THE HABIT OF SETTLING DOWN TO GREAT WORKS.

EPHEMERAL LITERATURE IS DRIVING OUT THE GREAT CLASSICS OF THE PRESENT AND THE PAST ... HURRIED READING CAN NEVER BE GOOD READING.

G. J. GOSCHEN, FIRST ANNUAL ADDRESS
TO THE STUDENTS, TOYNBEE HALL, LONDON

1894

THE EXISTENCE OF MENTAL AND NERVOUS DEGENERATION AMONG A GROWING CLASS OF PEOPLE, ESPECIALLY IN LARGE CITIES, IS AN OBVIOUS PHENOMENON ... THE MANIA FOR STIMULANTS ... DISEASES OF THE MIND ARE ALMOST AS NUMEROUS AS THE DISEASES OF THE BODY ... THIS INTELLECTUAL CONDITION IS CHARACTERIZED BY A BRAIN INCAPABLE OF NORMAL WORKING ... IN A LARGE MEASURE DUE TO THE HURRY AND EXCITEMENT OF MODERN LIFE, WITH ITS FACILITIES FOR RAPID LOCOMOTION AND ALMOST INSTANTANEOUS COMMUNICATION BETWEEN REMOTE POINTS OF THE GLOBE ...

THE CHURCHMAN, VOLUME 71

1895

IF WE TEACH THE CHILDREN HOW TO PLAY AND ENCOURAGE THEM IN THEIR SPORTS ... INSTEAD OF SHUTTING THEM IN BADLY VENTILATED SCHOOLROOMS, THE NEXT GENERATION WILL BE MORE JOYOUS AND WILL BE HEALTHIER THAN THE PRESENT ONE.

PUBLIC OPINION: A COMPREHENSIVE SUMMARY OF
THE PRESS THROUGHOUT THE WORLD, VOLUME 18

1895

THE CAUSE OF THE ... INCREASE IN NERVOUS DISEASE IS INCREASED DEMAND MADE BY THE CONDITIONS OF MODERN LIFE UPON THE BRAIN. EVERYTHING IS DONE IN A HURRY. WE TALK ACROSS A CONTINENT, TELEGRAPH ACROSS AN OCEAN, TAKE A TRIP TO CHICAGO FOR AN HOUR'S TALK ... WE TAKE EVEN OUR PLEASURES SADLY AND MAKE A TASK OF OUR PLAY ... WHAT WONDER IF THE PRESSURE IS ALMOST MORE THAN OUR NERVES CAN BEAR.

G. SHRADY (FROM P. C. KNAPP)
"ARE NERVOUS DISEASES INCREASING?" MEDICAL RECORD

1896

Cartoon 2.1 "The pace of modern life," xkcd

THE MANAGERS OF SENSATIONAL NEWSPAPERS ... DO NOT TRY TO EDUCATE THEIR READERS AND MAKE THEM BETTER, BUT TEND TO CREATE PERVERTED TASTES AND DEVELOP VICIOUS TENDENCIES. THE OWNERS OF THESE PAPERS SEEM TO HAVE BUT ONE PURPOSE, AND THAT IS TO INCREASE THEIR CIRCULATION.

MEDICAL BRIEF, VOLUME 26

1898

TO TAKE SUFFICIENT TIME FOR OUR MEALS SEEMS FREQUENTLY IMPOSSIBLE ON ACCOUNT OF THE DEMANDS ON OUR TIME MADE BY OUR BUSINESS ... WE ACT ON THE APPARENT BELIEF THAT ALL OF OUR BUSINESS IS SO PRESSING THAT WE MUST JUMP ON THE QUICKEST CAR HOME, EAT OUR DINNER IN THE MOST HURRIED WAY, MAKE THE CLOSEST CONNECTION FOR A CAR RETURNING ...

LOUIS JOHN RETTGER,
STUDIES IN ADVANCED PHYSIOLOGY

1898

IN THESE DAYS OF INCREASING RAPID ARTIFICIAL LOCOMOTION, MAY I BE PERMITTED TO SAY A WORD IN FAVOUR OF A VERY WORTHY AND VALUABLE OLD FRIEND OF MINE, MR. LONG WALK?

I AM AFRAID THAT THIS GOOD GENTLEMAN IS IN DANGER OF GETTING NEGLECTED, IF NOT FORGOTTEN. WE LIVE IN DAYS OF WATER TRIPS AND LAND TRIPS, EXCURSIONS BY SEA, ROAD AND RAIL-BICYCLES AND TRICYCLES, TRAM CARS AND MOTOR CARS ... BUT IN MY HUMBLE OPINION, GOOD HONEST WALKING EXERCISE FOR HEALTH BEATS ALL OTHER KINDS OF LOCOMOTION INTO A COCKED HAT.

T. THATCHER, "A PLEA FOR A LONG WALK",
THE PUBLISHERS' CIRCULAR

1902

THE ART OF CONVERSATION IS ALMOST A LOST ONE. PEOPLE TALK AS THEY RIDE BICYCLES-AT A RUSH-WITHOUT PAUSING TO CONSIDER THEIR SURROUNDINGS ... WHAT HAS BEEN GENERALLY UNDERSTOOD AS CULTURED SOCIETY IS RAPIDLY DETERIORATING INTO BASENESS AND VOLUNTARY IGNORANCE. THE PROFESSION OF LETTERS IS SO LITTLE UNDERSTOOD, AND SO FAR FROM BEING SERIOUSLY APPRECIATED, THAT ... NEWSPAPERS ARE FULL, NOT OF THOUGHTFUL HONESTLY EXPRESSED PUBLIC OPINION ON THE AFFAIRS OF THE NATION, BUT OF VAPID PERSONALITIES INTERESTING TO NONE SAVE GOSSIPS AND BUSY BODIES.

MARIE CORELLI,
FREE OPINIONS, FREELY EXPRESSED

1905

THERE IS A GREAT TENDENCY AMONG THE CHILDREN OF TODAY TO REBEL AGAINST RESTRAINT, NOT ONLY THAT PLACED UPON THEM BY THE WILL OF THE PARENT, BUT AGAINST ANY RESTRAINT OR LIMITATION OF WHAT THEY CONSIDER THEIR RIGHTS ... THIS FACT HAS FILLED WELL MINDED PEOPLE WITH GREAT APPREHENSIONS FOR THE FUTURE.

REV. HENRY HUSSMANN,
THE AUTHORITY OF PARENTS

1906

THERE IS A GREAT TENDENCY AMONG THE CHILDREN OF TODAY TO REBEL AGAINST RESTRAINT, NOT ONLY THAT PLACED UPON THEM BY THE WILL OF THE PARENT, BUT AGAINST ANY RESTRAINT OR LIMITATION OF WHAT THEY CONSIDER THEIR RIGHTS ... THIS FACT HAS FILLED WELL MINDED PEOPLE WITH GREAT APPREHENSIONS FOR THE FUTURE.

REV. HENRY HUSSMANN,
THE AUTHORITY OF PARENTS

1906

OUR MODERN FAMILY GATHERING, SILENT AROUND THE FIRE, EACH INDIVIDUAL WITH HIS HEAD BURIED IN HIS FAVOURITE MAGAZINE, IS THE SOMEWHAT NATURAL OUTCOME OF THE BANISHMENT OF COLLOQUY FROM THE SCHOOL ...

THE JOURNAL OF EDUCATION, VOLUME 29

1907

PLAYS IN THEATRES AT THE PRESENT TIME PRESENT SPECTACLES AND DEAL OPENLY WITH SITUATIONS WHICH NO PERSON WOULD HAVE DARED TO MENTION IN GENERAL SOCIETY FORTY YEARS AGO ... THE CURRENT REPRESENTATIONS OF NUDE MEN AND WOMEN IN THE DAILY JOURNALS AND THE ILLUSTRATED MAGAZINES WOULD HAVE EXCLUDED SUCH PERIODICALS FROM ALL RESPECTABLE FAMILIES TWO DECADES AGO ... THOSE WHO HAVE BEEN DIVORCED ... FORTY AND FIFTY YEARS AGO LOST AT ONCE AND IRREVOCABLY THEIR STANDING IN SOCIETY, WHILE TO-DAY THEY CONTINUE IN ALL THEIR SOCIAL RELATIONSHIPS, HARDLY CHANGED ...

EDITORIAL, THE WATCHMAN, BOSTON

1908

WE WRITE MILLIONS MORE LETTERS THAN DID OUR GRANDFATHERS, BUT THE INCREASE IN VOLUME HAS BROUGHT WITH IT AN AUTOMATIC ARTIFICIAL MACHINE-LIKE RING ... AN EXAMINATION OF A FILE OF OLD LETTERS REVEALS NOT ONLY A REMARKABLE GRASP OF DETAILS, BUT A FITNESS AND COURTLINESS TOO OFTEN TOTALLY LACKING IN THE MECHANICAL CURT CUT AND DRIED LETTERS OF TO-DAY.

FORREST CRISSEY, HANDBOOK OF
MODERN BUSINESS CORRESPONDENCE

1908

A HUNDRED YEARS AGO IT TOOK SO LONG AND COST SO MUCH TO SEND A LETTER THAT IT SEEMED WORTH WHILE TO PUT SOME TIME AND THOUGHT INTO WRITING IT. NOW THE QUICKNESS AND THE CHEAPNESS OF THE POST SEEM TO JUSTIFY THE FEELING THAT A BRIEF LETTER TO-DAY MAY BE FOLLOWED BY ANOTHER NEXT WEEK-A "LINE" NOW BY ANOTHER TO-MORROW.

PERCY HOLMES BOYNTON, PRINCIPLES OF COMPOSITION

1915

able to avoid technological influence by avoiding the technology. According to Lynne Markus (1994), however, the key issue is not which features have which effects. Instead, "it is the degree to which the outcomes, whether positive or negative, are the inevitable results of technological characteristics, or whether they might be subject to other influences" (1994: 122). Markus argues that technological determinism is ultimately an optimistic theory. If negative outcomes can be traced to technological causes, then they can be eliminated with better technology. It is also, however, a disempowering perspective that positions people as powerless to stop these changes unless they invent new, better, or different technologies or eschew technology altogether.

As the similarities amongst Socrates', Carr's, and Alloway's articulation of new media's effect on wisdom suggest, deterministic rhetorics tend to be formulaic and hyperbolic (Turkle, 2004). Predictable negative stories are met with predictable positive alternatives in a familiar contradictory binary. In the 1920s, for instance, people anticipated that radio would "provide culture and education to the masses, eliminate politicians' ability to incite passions in a mob, bring people closer to government proceedings, and produce a national culture that would transcend regional and local jealousies" (Douglas, 2004 [1999]: 20). Now, Douglas continues, "we've been witness to all sorts of overheated and contradictory predictions about the Internet: it will re-create political and cultural communities in cyberspace; it will bring pornographers, stalkers, and credit-card scammers into our homes, corrupting our kids and ransacking our privacy." The cartoonist Randall Munroe demonstrated this beautifully in his cartoon "The Pace of Modern Life" (cartoon 2.1).

The historian David Nye (1997) has carried out extensive research on how nineteenth-century Americans responded to new technologies of the time. As he summarized in a later article (2004), Americans could have used many narratives to make sense of new technology, but in practice usually used six, three *utopian*, envisioning a world improved by technology, and three *dystopian*, visions of a world made worse. In the utopian stories, technologies are seen as natural societal developments, as improvements to daily life, or as forces that will transform reality for the better. Dystopian reactions emphasize fears of losing

control, becoming dependent, and being unable to stop change. In the three dystopian rhetorics Nye identifies, technology may be seen as a way for elites to control the masses, as agents of doom, or as malevolent tricksters that promise positive change but in the end only make our lives more difficult. "The long history of popular culture's alternately fearful and euphoric representations of electronic communication," wrote Boddy (2004: 4), "suggests the continuing historical relevance of such ephemeral fantasies of pleasure and terror." Even in his dystopian article, Carr (2008) offered utopian visions, arguing that "the new technology did often have the effects [Socrates] feared," yet also that Socrates "couldn't foresee the many ways that writing and reading would serve to spread information, spur fresh ideas, and expand human knowledge (if not wisdom)."

Recurrent themes in the reception of new technology

We are surrounded by messages that treat media qualities as a cause of social consequences. In this section, I identify common recurring themes regarding new media and social life that appear in popular media. In addition to previous theorists and cultural historians of technology, I make use of Janna Quitney Anderson's (2005) compilation of predictions and descriptions of the internet from newspapers, magazines, and other American sources from the early 1990s. I also use cartoons from the *New Yorker* – an influential and long-lived magazine that has been questioning our relationship to technology through humor since its inception in the 1920s – and letters from the two most popular American advice columns, "Ann Landers" and "Dear Abby." The *New Yorker* reached a sector of the American population – urban, educated, and affluent – most likely to be early adapters of the internet and earlier new technologies. "Ann Landers" and "Dear Abby" together reached as many as 110 million readers daily and, especially in the mid 1990s, could well have been the only mass messages about the role of the internet in intimate relationships that many people encountered. Though these sources might seem trivial, silly, or even gossipy, they should not be underestimated in their capacity to reflect pervasive cultural attitudes. Writers and editors design mass-mediated messages in order to resonate with

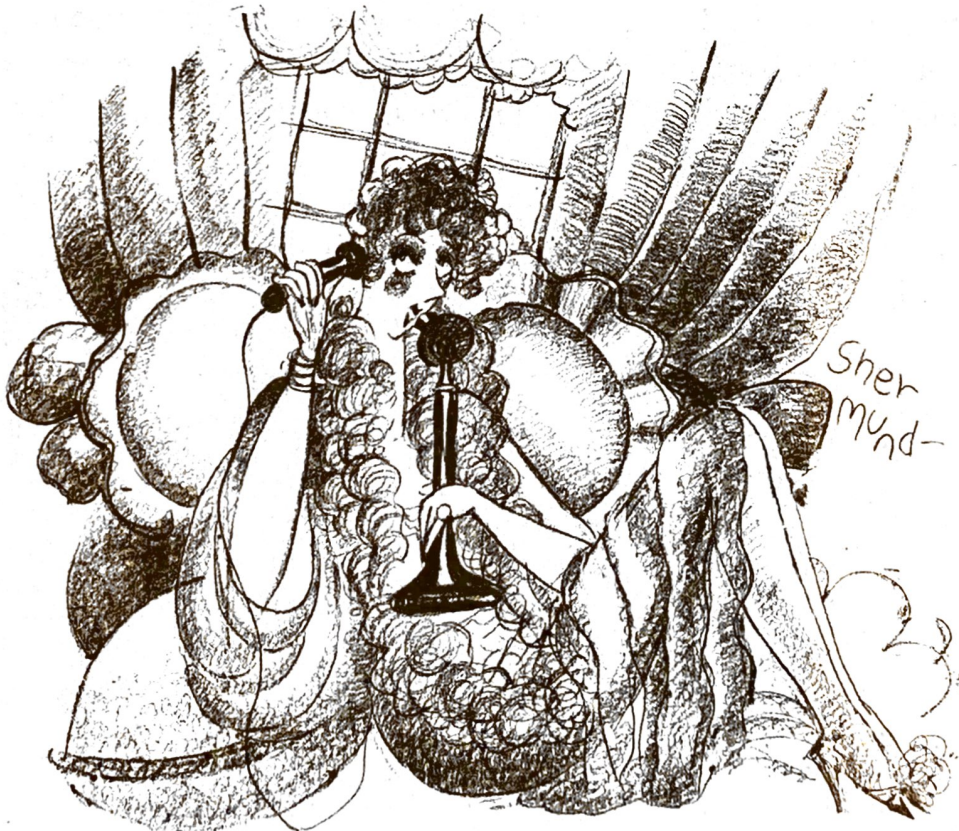
their audience's concerns. Their livelihood depends upon it. Though other kinds of messages, including scholarly reports such as those we'll turn to in the remaining chapters, may be better sources of accurate information about new media effects, mass-mediated messages are considerably more likely to influence how people think about new technology and, as we'll return to below, how they subsequently behave. The themes I'll consider in this section include issues of the authenticity of mediated communication and relationships, the quality of mediated interactions, the formation of new relationships, the effects of anonymity (honesty, deception, liberation, and the potential erasure of status), and the effects on existing close relationships (will they become closer, be replaced with mediated relationships, be forgone altogether?). I postpone my discussion of the themes about children, specifically their status as potential victims and as dangerously empowered, until the section on social construction that follows.

Socrates' idea that writing provides "not truth, but only the semblance of truth" remains very much with us. At the core of most, if not all, of the rhetorics about mediated forms of personal connection is a persistent sense that mediated interaction and the relationships sustained through it are not *real*. Many "fear that actual human connection has been irretrievably lost," although others hope "that communication technologies can promote human connectivity" (Sturken & Thomas, 2004: 3). In the telephone's early years, some worried it could sustain "only a semblance of 'real' relations" (Fischer, 1992: 224). The common use of the term "virtual" to describe online relationships and groups, and of the acronym "IRL" (in real life) to describe offline connections, are evidence of this deep-seated presumption.

People often question the *quality of mediated interactions*, believing technological mediation takes away the social cues that provide rich meaning (a topic explored in depth in the next chapter). Walter Benjamin (2009 [1935]) famously argued that the "aura" of tangible art provides much of its value, a value lessened in the age of mechanical reproduction. Replicating this concern, internet critic Stoll (1995, cited in Anderson, 2005: 65) wrote that, in comparison to letters, electronic interaction was cold: "The paper doesn't age, the signatures

don't fade. Perhaps a future generation will save their romances on floppy disks [but] give me a shoebox of old letters."

Electronic messages are frequently portrayed as vacuous. A 2009 study by market research firm Pear Analytics, for instance, created a category called "pointless babble" into which they placed 40 percent of Twitter messages, echoing oft-heard complaints that mobile phones lead to empty conversation, sustained for the sake of interacting even when we have nothing to say ("Twitter tweets are 40% 'babble,'" 2009). The idea that new media cause pointless babble could also be seen in a 1927 *New Yorker* cartoon in which a luxuriantly robed, very made-up, clearly affluent, woman reclining on a couch said: "Hold the line a minute, dear ... I'm trying to think what I have on my mind" (cartoon 2.2).



Cartoon 2.2 "Hold the line a minute dear . . . I'm trying to think what I have on my mind."

One of the hopes surrounding the internet is that it can *broaden our pool of potential relational partners* and lead to new relationships (a topic we will return to in chapter 5). For instance, this testimonial from “A Netizen in Chicago” appeared in “Ann Landers” in 1996:

I met my girlfriend on the Net. She is Canadian. I live in Illinois. We have gotten together, face to face, only once, but over the last few months, we have gotten to know each other well. We have fallen in love. We have four meetings planned and call each other twice a week. We e-mail every night.

I also have made many friends on the Net. Most of us will never meet, but we offer our support when one of us is feeling blue and our accolades when things are going great.

On our news group alone, many friendships have developed. There have been four marriages so far, and several relationships are now in progress that will probably end up in marriage. None of us is hooked on the Net, but we do check frequently to see how our on-line pals are doing.

At the same time, many question whether relationships formed this way can ever be as real as those formed face-to-face. Cartoon 2.3, from 2006, plays off the befuddled faces of older parents against the smiling faces of a young – mediated – couple, showing both the



Cartoon 2.3 “We met online.”

utopian hope for new relational opportunities and the wary uncertainty that surrounds them.

One reason for uncertainty in mediated environments is that, with fewer visual and auditory social cues, people are not sure whether or not they can *trust* other people to be who they claim to be. This is the central problem of anonymity. Perhaps the best encapsulation of the binary between hope and dread that the anonymity of the internet provides is Peter Steiner's famous 1993 *New Yorker* cartoon of two dogs, one seated on a chair at the computer, the other sitting on the floor watching (cartoon 2.4). The computing dog explained to the other, "On the Internet, nobody knows you're a dog," a caption which, writes Anderson (2005: 228), "will live forever as an online-culture touchstone." This cartoon has been reproduced in numerous scholarly



Cartoon 2.4 "On the Internet, nobody knows you're a dog."

articles and books, has its own Wikipedia page, and has become one of the most popular *New Yorker* cartoons ever, as indicated by its high rank on requested reprint and presentation rights. A Google search for its caption in 2009 turned up more than 250,000 hits, and by 2013 it turned up nearly 53 million. Its transnational appeal can be seen in its appearance on the cover of an Estonian book about the internet (Institut Za Etnologiju I Folkloristiku, 2004).

Although Steiner has said he didn't know what the cartoon was about when he drew it, *New Yorker* cartoon editor Robert Mankoff said it "perfectly predicted both the Internet's promise and its problems" (2004: 618). Whether this cartoon represents a dream or a nightmare depends on whether one is the dog or the fool unknowingly talking to the dog.

Of course, no one really expects house pets to go online and pretend to be people, but they often expect that sparse social cues will cause people to lie about themselves. As one man explained in a 1994 letter to "Ann Landers":

Every woman on a computer line describes herself as Cindy Crawford, and every guy is Tom Cruise. Women lie about their marital status, weight, age and occupation. And get this, Ann, some women are actually guys.

Authentic self-representation is not always a simple question of true and false, as we will address in chapter 5. With its potential to liberate people from the constraints of their social context, people may also be seen as becoming *more honest* in mediated encounters. This advice column letter-writer admitted to Abby that she had presented a deceptive identity online, yet claimed the emotions and relationships predicated upon it were real:

I am deeply in love with a man who is handsome, smart and loving. We are engaged and happy together. The problem? We met on the Internet. Abby, he thinks I am 26, but I'm not. Everything I've said to him has been a lie. I am really 12.

On a societal level, anonymity opens the possibility of *liberation* from the divisions that come about from seeing one another's race, age, gender, disabilities, and so on. Standage (1998) tells of an interracial relationship formed via telegraph without either party's knowledge of



Cartoon 2.5 “How the hell does Facebook know I’m a dog?”

the other’s racial identity. Early rhetoric about the internet often speculated that the reduction of social cues would lead to people valuing one another’s contributions for their intrinsic worth rather than the speaker’s status. The internet would lead to the world Martin Luther King Jr. dreamed of, in which people would be judged by the content of their character rather than the color of their skin. A now-legendary telecommunication company advertisement that ran during the 1997 Superbowl described it like this: “There is no race, there are no genders, there is no age, there are no infirmities, there are only minds. Utopia? No, the Internet.” Sites like Facebook and (for a time) Google+ have insisted that all accounts belong to individuals who use real names and have encouraged everyone to enter many identifying pieces of information that tie them to particular verifiable places and times. This stance is both mocked and critiqued in Rob Cottingham’s 2010 twist on Steiner’s dog cartoon (cartoon 2.5).

On the other hand, many people, especially in the middle and upper classes, view social divisions as useful and necessary means of protecting themselves and their families from unwanted outside influences and dangers (Marvin, 1988; Spigel, 1992). For them, the

specter of technological *erasure of social status information* is frightening. Communication technologies have long been represented as a source of stress for families, making it too easy for people to engage in “irregular courtship” with people outside the community (Marvin, 1988: 73). The telephone was feared for its potential to enable the “wrong kinds” of sociability across age, class, and racial lines (Fischer, 1992: 225). When the telephone was new, articles criticized ordinary people who called New York City’s mayor regularly, simply because they now could. Those placing the calls might have understood this as a utopian outcome of the technology – allowing them greater access to those of significantly higher status and greater ability to participate in governance – but, for the mayor and other members of the elite, it demonstrated an intrusive threat. Furthermore, even when people themselves do not enter the sanctuary of the privileged, their communication artifacts might. The phonograph and radio were often viewed as corrupting because they raised the specter of interracial interaction (and sex!) by bringing ragtime and jazz music written and performed by black artists into affluent white homes (Douglas, 2004 [1999]).

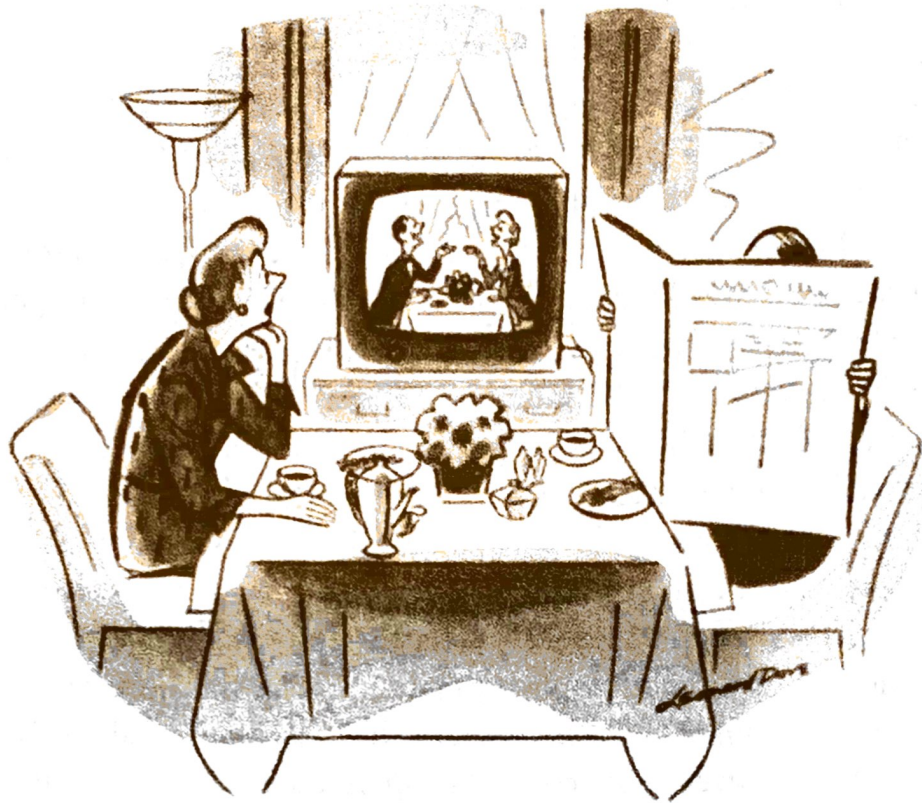
Building new online relationships has been both touted and decried as a way for a person to “assemble his or her own electronic neighborhood” (Dertouzos, 1991, in Anderson, 2005: 49). Though some, such as Dertouzos, see this as a perk, others worry that, rather than lessening differences in social class, social divides will be reproduced or increased by technology. “The superhighway may connect us more to other people of similar interests and beliefs,” worried Brown in the *Seattle Post-Intelligencer* (1995, cited in Anderson, 2005: 64), “But we’ll have less communication with those who are different. Socially we may find ourselves returning to a form of tribalism, as we separate ourselves along group lines – racial, ethnic, ideological – choosing access to only the information that speaks to our identities and beliefs.” Eli Pariser’s (2011) book *The Filter Bubble* makes a similar argument, raising concerns that algorithms shape what people see, based on assumptions about what will interest them.

Technologically deterministic rhetorics also frame new communication media as improving and damaging the close personal relationships people sustain face-to-face. The telephone was seen as a means to bring people closer together, build communities, and

decrease loneliness (de Sola Pool, 1977; Fischer, 1992). Electricity was going to decrease the divorce rate since it would make domestic chores easier to do and lessen the conflict they created (Marvin, 1988). The automobile spawned dreams of family togetherness (Fischer, 1992), as seen in the recurrent motif of the car-based family vacation. Early ads for the radio and phonograph often showed happy families where clean children looked approvingly at their parents as they gathered around the technology in their living rooms. As Spigel (1992: 3) shows in her analysis of popular communication during television's early years, the television "was depicted as a panacea for the broken homes and hearts of wartime life . . . shown to restore faith in family togetherness . . . however . . . equally dystopian discourses warned of television's devastating effects on family relationships and the efficient functioning household."

In the context of contemporary digital media, the hope remains that new communication technologies will *bring families and loved ones together*. Today, we hear of people staying in touch with their children through Skype, or using mobile "family plans" to keep the family in continuous contact. A 1995 article in *Wired* predicted that the family would rise to the top of a new communication hierarchy: "Every family will have its own mailing list carrying contributions from its members. . . . I sense that the rules will be something like this: friends over strangers; family over friends; and within those categories, the geographically or chronologically close over the distant" (Hapgood, 1995, cited in Anderson, 2005: 64).

The dystopian alternative is usually articulated as a fear that new media will take people away from their intimate relationships, as they *substitute* mediated relationships or even media use itself for face-to-face engagement. Fischer (1992) described early twentieth-century concerns that the telephone would replace visiting. The fear of substituting mediated for meaningful relationships also occurred around television. A 1962 *New Yorker* cartoon, for instance, showed a husband and wife seated at the dinner table, his face buried in a newspaper (cartoon 2.6). The wife watched a television depicting a couple sharing a romantic dinner. The image on the screen simulated intimacy while media old (newspaper) and new (television) kept the spouses from connecting with each other. A popular photo passed



Cartoon 2.6

around social networks in 2013 specifically drew this same connection, depicting an historic black-and-white image of a train full of men, backs to the camera, all reading newspapers. The tagline? “All this technology making us anti-social.”

A common motif in stories of digital media damaging relationships is the “cyberaffair.” One of the most recurrent metaphors advice columns used to describe the internet during its early American diffusion was “homewrecker.” Published letters and replies repeatedly described men and women who, upon getting access to the internet, found a new love (or pornography), and ruined their marriage. A 1995 letter to “Ann Landers” begged Ann to warn readers about “an insidious monster about to pounce on the American people. It will destroy more marriages and lives than anything the world has ever known. It’s called the Internet.” Ann Landers cast the phenomenon as rampant, writing in 1998, “My mail tells me that the Internet may become the principal home-wrecker of the next century.”

In addition to ruining close relationships, the internet and other new media are frequently depicted as causing *social isolation*. In the *Wall Street Journal*, Hays speculated that “Connecting with one and all in the electronic ether could leave people more disconnected than ever before, as the necessity of face-to-face contact diminishes. If a troubled or shy office worker easily finds solace and approval on the networks, will she be less inclined to seek out friends on the job?” (1993, cited in Anderson, 2005: 96). Writers to “Ann Landers” and “Dear Abby” in the late 1990s frequently described internet users as “junkies” who get “addicted” to the internet, destroying their close relationships. One wrote:

My husband of 22 years has become a recluse. He refuses social invitations, has quit attending our children’s activities and lies to me about the amount of time he spends surfing the ‘Net. Like an alcoholic, he apologizes and promises to do better, but once the computer clicks on, he sits there, transfixed, until the wee hours of the morning. (1998)

“People are not going to want to leave their homes when they can have more fun in cyberspace,” warned futurist Faith Popcorn in the London *Independent* (Anderson, 2005: 67–8). In *US News & World Report*, Neal Postman offered a futuristic scenario that summarized the dystopian fears concisely:

Public life will have disappeared because we did not see, in time to reverse the process, that our dazzling technologies were privatizing almost all social activities. . . . We replaced meeting friends with the video telephone and electronic mail . . . We became afraid of real people and eventually forgot how to behave in public places, which had become occupied almost entirely by criminals. The rest of us had no need to be with each other. (1993, cited in Anderson, 2005: 96)

To summarize, technologically determinist rhetorics of digital media, like those of previous communication technologies, often focus on the authenticity of identity and the well-being of “real” relationships. Utopian rhetorics emphasize the happy prospect that technology will liberate true selves from the constraints of geography and the shackles of marginalized social identities and empower them to enrich their offline relationships and engage in new ones online. These visions are pitted against tangled dystopian scenarios of deception, tribalism,

and the erasure of social class distinctions. These perpetuate fears that communication technologies will take us farther apart from one another, leading us to cocoon in highly selective groups of like others, embracing machines instead of people. These rhetorics are predictable, and tell us as much – if not more – about society than they tell us about technologies. They point to our deep need to trust, connect with, and protect one another and ourselves, and the perpetual struggles these needs engender. Once again, xkcd cartoonist Munroe summarizes the issues concisely (cartoon 2.7).

Social construction of technology

People have the power

In the examples I have just discussed, and the historical trends they represent, technology is positioned as causing us and our social lives to change. Determinism views technology as arising independent of social contexts and then affecting them. Other perspectives share concern about the same issues, but do not grant technology as much causal agency. The Social Construction of Technology (SCOT) perspective focuses on how technologies arise from social processes. SCOT proponents view technologically deterministic perspectives as “inadequate as explanations and dangerously misleading [because] human beings, not machines, are the agents of change, as men and women introduce new systems of machines that alter their life world” (Nye, 1997: 180). One focus of social constructivism is how social forces influence the invention of new technologies (e.g. Bijker, Hughes, & Pinch, 1987; Bijker & Law, 1992). From a SCOT perspective, inventors are embedded in social contexts that make it feasible to use a garage to create a personal computer or a bicycle repair shop to invent an airplane. The choices that designers and developers make as they develop technology are seen as dependent on their social contexts which are, in turn, shaped in part by communication. In the contemporary context, one might look at the female avatars available in online games, characters that are almost uniformly shaped like pornographic fantasy figures, and posit that this is related to their having been designed by people – primarily male – who are embedded in a

**THE
SIMPLE ANSWERS**
TO THE QUESTIONS THAT GET ASKED
ABOUT EVERY NEW TECHNOLOGY:

WILL ☐ MAKE US ALL GENIUSES?	NO
WILL ☐ MAKE US ALL MORONS?	NO
WILL ☐ DESTROY WHOLE INDUSTRIES?	YES
WILL ☐ MAKE US MORE EMPATHETIC?	NO
WILL ☐ MAKE US LESS CARING?	NO
WILL TEENS USE ☐ FOR SEX?	YES
WERE THEY GOING TO HAVE SEX ANYWAY?	YES
WILL ☐ DESTROY MUSIC?	NO
WILL ☐ DESTROY ART?	NO
BUT CAN'T WE GO BACK TO A TIME WHEN—	NO
WILL ☐ BRING ABOUT WORLD PEACE?	NO
WILL ☐ CAUSE WIDESPREAD ALIENATION BY CREATING A WORLD OF EMPTY EXPERIENCES?	WE WERE ALREADY ALIENATED

Cartoon 2.7 "Simple answers," xkcd

patriarchal culture that views women as sex objects and thinks of their primary audience as men and boys.

Furthermore, SCOT theorists see technological development as influenced by many factors beyond the inventors. Investors – both private and governmental – have priorities that shape which technologies are deemed worthy of pursuit and given the resources to enable

their success. Competitors drive development in different directions, as seen, for instance, in Microsoft turning from a DOS interface to Windows in emulation of Apple's graphic operating system, or Facebook's efforts to capitalize on the success of Twitter with revisions of its own site. Government agencies may shape technological development with their dispersion of grant monies, policies that prescribe what machines and sites can and cannot do, and actions that influence companies (as when some companies began using secure connections by default to lessen the likelihood of NSA eavesdropping on their customers). Furthermore, users shape development, especially, as Fischer (1992) notes, when they are organized. These differing sources of influence do not always agree. Indeed, they are often in conflict with one another, and the shape of any given technology is often a matter of compromise.

SCOT proponents also focus on what happens during technological adoption, arguing that a wide range of social, economic, governmental, and cultural factors influence how people take up and use media. In his study of the adoption of the telephone, Fischer (1992: 269) argued for a "user perspective." "Users," he wrote, "try to put a new technology to their own ends, which can lead to paradoxical outcomes not easily deducible from the straightforward logic of the technology." Lister, Dovey, Giddings, Grant, and Kelly (2003: 81) draw on media theorist Raymond Williams to argue that "whatever the original intention to develop a technology might be, subsequently other social groups, with different interests or needs, adapt, modify or subvert the uses to which any particular technology is put." Communication about technology, as seen in the messages discussed above, is one important force in these processes. The telegraph, radio, refrigerator, and internet are all technologies whose unexpected uses became their most common (Nye, 2004). The internet, conceived as a military back-up system, exemplifies technology re-envisioned and transformed by its users.

Though it's important to understand the power users have, it's easy to grant too much influence to individuals, when, as Fischer (1992) notes, there are other social structures at play, including access, availability, price, and marketing. Texting is an interesting example of this. It used to be that when I mentioned using mobile phones to send text messages, most of my college students – almost all of whom had

mobile phones in their pockets – stared blankly. They’d never heard of such a thing, despite the fact that this had become a major use of mobile phones in other countries in Asia and Europe years earlier. Regulatory and pricing decisions in the United States had hindered its diffusion (Ling, 2012). Around 2005, pricing plans on US cell phone contracts changed to make texting inexpensive. Then my students all used this feature of the phone. They no longer stared blankly. Indeed, some of them were too busy texting under their desks to register what I was saying.

The social influence model proposed by Janet Fulk (1993) draws attention to the influence of peers on individuals’ perceptions and subsequent uses of media. In her work on adoption of new media (specifically email) in an organizational context, she found that the perspectives of peers, especially “attractive” peers – those who are friends as well as good colleagues – were strong influences on individuals’ attitudes toward email. In a study of attitudes toward mobile phones in the midwestern United States, Campbell and Russo (2003) also showed that attitudes toward behaviors, such as whether or not you should turn off your mobile in a restaurant, were shaped by the attitudes of peers. As people discuss new media, and as those media are represented in other media such as television, print, and film, devices themselves come to carry social meaning (so that some phones look cool, and others look dorky). Media are also discursively associated with genders, so that computers are often cast as male, and telephones as female (Rakow, 1992; Hijazi-Omari & Ribak, 2008), and the disembodied voices of Siri and Cortana are female.

Moral panic

As we saw in our discussion of technological determinism, new media often stir up fears of moral decline. These fears, which take form in dystopian rhetorics, can lead to important policy decisions at personal, household, governmental, and design levels. In other words, the communication about the technologies becomes more important than the technologies in shaping the uses and effects of new media. Such rhetorics often focus on the well-being of children, and especially on the well-being of teenage girls. Concerns about protecting

children seem to arise almost instantaneously in the wake of any new communication medium. Children are often seen as innocents who can be corrupted, damaged, and permanently transformed by technology in ways that adults such as parents, teachers, and political leaders are powerless to prevent (Facer, 2012; Marvin, 2004; Sturken & Thomas, 2004). "The relationship of children and media culture, and the larger social context in which this relationship is forged," wrote Marvin (2004: 283), "is constantly debated and rehashed in the popular press and in public discourse." In the United States, the automobile led to fears that teenagers would isolate themselves from their families (Fischer, 1992). Among the media that have been charged with causing children to mature too soon and/or become juvenile delinquents are books, movies, comic books, and television (Fang, 2008). In American history, dime novels, so popular in the mid 1800s, spawned concern about the intellectual development of their readers, potential increases in anti-social behavior, and criminality, but also fostered hopes that the new medium could be used for enlightenment (Fang, 2008).

These days, children are seen as likely to be exposed to (or, worse yet, exploited for) pornography and sexual encounters and to encounter pervasive cyberbullying. The most prominent examples of this in the discourse around the internet concern sexual predation. To hear much of the public representation of the internet is to imagine a world in which sexual crimes are reaching new heights as unwitting innocents are drawn into deceptive relationships that end in molestation, abduction, and even death. Adult men do sometimes use the internet to lure girls into inappropriate relationships. This is surely awful, but it is very unusual. When adult men and under-aged girls do meet through the internet for sexual encounters, it is usually consensual (inasmuch as an under-aged person is capable of consent) and honest, if morally dubious (Cassell & Cramer, 2007; Wolak & Finkelhor, 2013). Cassell and Cramer's close analysis of US federal crime-report data regarding crimes against children shows that crimes against people 12–17 years old fell between 46 percent and 69 percent after 1993–5, despite the fact that millions of young people integrated the internet into their lives in that time frame. Sexual predation between strangers remains extremely infrequent relative to sexual predation

within existing relationships, and assaults between those who met online are but a tiny proportion of stranger crimes (Internet Safety Technical Task Force, 2008).

However, the perception that this is a serious risk to most young people who use the internet is a classic case of a “moral panic” in which anxieties over uncontrollable social forces become the focus of efforts to understand a new cultural trend (Cohen, 1972). Panics displace our anxieties over something more important onto the technology, perhaps because they are too difficult or threatening to face directly (Thomas, 2004). One could just as easily argue that the internet has protected teens by keeping them home. Sexual predation is terrible, but if your goal is to reduce sexual crimes against children or women, the internet is the wrong place to focus. It is, however, a much easier target than our own marriages, homes, neighborhoods, places of worship, and schools, where most crimes against children and women occur (Internet Safety Technical Task Force, 2008).

Similarly, media reports of cyberbullying (often ending in a teenage suicide) are not entirely inaccurate, but are deceptive. Online bullying is almost always rooted in offline bullying (Livingstone & Smith, 2014). A 2013 overview of youth internet safety surveys conducted between 2000 and 2010 (Jones, Mitchell, & Finkelhor, 2013) attributed what seems to be an increase in online harassment to more female friends interacting more often through the internet, with the consequence that more offline aggression bleeds into online environments.

In a review of all the peer-reviewed empirical research they could find on child risk and harm online, Livingstone and Smith (2013) concluded that approximately 20 percent of adolescents are affected by online aggression, strangers seeking contact, sexting, or pornography. Despite increases in young people’s access to online experiences in recent years, exposure to risk and actual harm have not become more frequent (Livingstone & Smith, 2014). Parents, however, tend to overestimate how often their children encounter distressing material online (Sorbring & Lundin, 2012). This is not to argue that children do not experience harm online. For the small percentage of young people who both encounter sexual materials or predators online and find those experiences distressing, the harm can be very real (Livingstone & Smith, 2014). Yet it is important to recognize that, on average, the

harms children experience through digital media are in line with, or less than, those they experience without new media.

The flip side to children's abilities to do new things outside parental supervision through technology is that children are often seen not just as endangered, but as dangerous. Advertisements for early computers, targeted at parents in hopes they would buy them for their children, presented young people as natural users, even if parents were constructed as naïve, setting the stage for the perception that parents are clueless, and children naturals (Facer, 2012). Although children neither have nor think they have all the digital skills that are attributed to them (Livingstone, 2008), some children do develop skills and use technologies in ways that limit how much parents and others can control them (Banet-Weiser, 2004; Marvin, 2004). In one of my son's middle schools, for instance, students thwarted the district's efforts to keep them off social media on school machines by creating a system of hidden folders that gave them access to sites they continued to use.

The phenomenon of teen sexting, sharing naked selfies with each other via their mobile phones, combines the fear of children's sexuality and its potential negative consequences with the fear of children's empowerment. A comprehensive review of sexting research, media coverage, and educational resources in Australia, combined with focus group research, found that teens viewed "sexting" as an adult term that did not reflect their practices and experiences (Albury, Crawford, Byron, & Mathews, 2013). Given the regularity with which prominent adults are publicly humiliated for committing behaviors such as sending photographs of their genitalia through Twitter, one has to wonder how much adults' fear of children's behavior reflects fear of their own activities.

Fears about children can also be understood as arising from adults' fear of losing control over them, a problem inherent in child rearing, regardless of whatever technologies may or may not be present. Since fear is often displaced onto seemingly more manageable technology, parents, child welfare bodies, clinicians, teachers, and governments often try to protect children by implementing surveillance systems, legislating policy limitations on children's access to technology, and creating new technologies to limit children's interaction with technology (Marvin, 2004: 281). Displacing our anxieties about children's

safety onto the internet and mobile phones makes our fear more manageable, but does little to protect children, and may keep them from realizing the benefits new technologies can offer them (Cassell & Cramer, 2007; Ito et al., 2010; Livingstone, Haddon, & Görzig, 2012; Livingstone & Helsper, 2013).

In sum, social constructivism provides a polar alternative to technological determinism. Rather than viewing social change as a consequence of new media, it views new technologies and their uses as consequences of social factors. From this perspective, the utopian and dystopian rhetorics I discussed above tell us little about the technology, but do provide insight into how technologies come to be and how they come to be understood and used. The example of moral panics shows how deterministic rhetorics can give rise to understandings of technology and to policy decisions which in turn shape the uses and consequences of those media, though not always as intended.

Social shaping of technology

If technological determinism locates cause with the technology, and social constructivism locates cause with people, a third perspective, sometimes called social shaping (MacKenzie & Wajcman, 1985/1999), emphasizes a middle ground. From this perspective, the consequences of technologies arise from a mix of “affordances” (Gibson, 1977; Norman, 1988) – the capabilities configurations of technological qualities enable – and the unexpected and emergent ways that people make use of those affordances. Expectations of how technologies will be used are built into their design (Gershon, 2010; Nardi, 2010), yet those influences do not necessarily dominate experience. Katz and Aakhus (2002) speak of technologies having “logics” or “apparatchicks” that influence but do not determine use. “Machines,” wrote Douglas (2004 [1999]: 21), “do not make history by themselves. But some kinds of machines help make different kinds of histories and different kinds of people than others.” Machines “can and do accelerate certain trends, magnify cultural weaknesses, and fortify certain social structures while eroding others” (Douglas, 2004 [1999]: 20). Social media platforms engineer particular kinds of sociality even as their users develop norms around their use (van Dijck, 2013).

People, technologies, and institutions all have power to influence the development and subsequent use of technology. They are “inter-related nodes in constantly changing sociotechnical networks, which constitute the forms and uses of technology differently in different times and places for different groups” (Lievrouw, 2006: 250). Historical analyses demonstrate that social shaping is “a process in which there is no single dominant shaping force” (MacKenzie & Wajcman, 1985/1999: 29). For instance, with Jean Burgess (Burgess & Baym, 2014), I studied the development of the @-reply, hashtag, and retweet conventions on Twitter. Each of these features was developed and used by lead users before Twitter incorporated them in its design. From the social shaping perspective, we need to consider how societal circumstances give rise to technologies, what specific possibilities and constraints technologies offer, and actual practices of use as those possibilities and constraints are taken up, rejected, and reworked in everyday life.

Domestication of technology

The fact that we no longer engage in either utopian or dystopian discourses about the landline telephone or, for that matter, the alphabet is evidence of how successfully earlier technologies have been domesticated. What once seemed marvelous and strange, capable of creating greatness and horror, is now so ordinary as to be invisible. Life without them can become unimaginable (my son once asked how we used the internet before computers were invented). When others don’t use them – as when someone refuses to have a mobile phone, text, or use Facebook – it can become a problem not just for them, but for us (Ling, 2012).

British and Norwegian media and technology studies in the 1990s developed the “domestication” approach to technology in order to continue where the social shaping of technology leaves off (Haddon, 2006). This approach concurs with social shaping in seeing both technology and society as influences in the consequences of new media, but it is particularly concerned with the processes at play as new technologies move from being fringe (wild) objects to everyday (tame) objects embedded deeply in the practices of daily life. Early

domestication work showed that, by the time most users encounter technologies, they are already laden with the social meanings given them by advertisement, design, and the kinds of rhetorics we have been discussing. Nonetheless, “both households and individuals then invest them with their own personal meanings and significance” (Haddon, 2006: 196). This is particularly true early on, in the “mastery” stage of domestication, when how we use and display our technologies and the ways we rework them to fit our needs can have most influence on their subsequent development (Ling, 2012). The process of domestication plays out at societal levels, but also in daily interactions as people figure out where to place devices, and, more importantly, who gets to use them for what and who doesn’t (Silverstone, Hirsch, & Morley, 1992).

As technologies are integrated into everyday life, they come to be seen as offering a nuanced mix of both positive and negative implications. In the case of the mobile phone, despite near-ubiquitous adoption, there are still competing narratives between phones as ostentatious, expensive, stressful, and prone to creating bad manners and phones as assuring safety, autonomy, access to others, and control over the flow of daily life (Ling, 2012). Syntopian perspectives (Katz & Rice, 2002) view new technologies as simultaneously enabling and disabling. The extremes may persist, but in between we use communication to negotiate a vast realm of detail, contradiction, and complexity. In closing this chapter, I want to consider how we move from a period where new technologies are threatening or exciting to one in which they are ordinary and barely worthy of remark. The advice columns I drew on above serve as a remarkable microcosm through which to see domestication of the internet in action.

In early letters, particularly those prior to 2000, there was a very clear norm that the internet was dangerous. Internet users were often described as junkies, addicts, recluses, or, at best or on average, “fairly decent people” (as Ann Landers wrote in 1994). Both columns had readers who were having different experiences, however, and the columns provided a venue in which those having good experiences were able to resist the negative image of the technology being constructed in others’ letters and in Ann’s and Abby’s responses. A Netizen in Chicago’s 1996 letter (seen above) explaining all the

positive relationships he had built online is one example. Similar letters from many others singing the praises of the internet poured in. The mail, wrote Landers in 1996, was “staggering, and most of the readers agree.”

Letter writers defended the internet against dystopian visions in many ways. One was through the use of metaphor, comparing the internet to fire, parks, knives, and, in one letter (which I swear I did not write), the telephone, as seen in these 1996 examples:

Saying the Net is destructive because it can be used incorrectly is like saying humankind would be better off without fire because it can be dangerous.

Get a clue, Ann. Condemning the Internet because some people meet scoundrels on-line is like condemning parks because some pedophile exposed himself to children in a park.

The problem with people and the Internet is not the Internet but what people do with it. The same is true of a knife. I was under the knife having lifesaving surgery the same day someone across town was murdered by one.

Wary of the Internet, Ann? I'll bet if you had been around in the 1880s, you'd have been suspicious of the telephone because it could be used for “nefarious purposes.” Anything new needs time to be accepted.

As seen in this comparison between the telephone and the internet, letter writers who defended the internet often took a social constructivist perspective on the relationship between technology and society. Some explicitly challenged Ann's, Abby's, and other letter writers' construction of the technology's status as cause rather than symptom:

You have said that the Internet has disrupted relationships between couples and destroyed marriages. That is not the fault of the Internet. Those relationships were already in trouble. (1996)

People who stay up all night on their computers don't have an Internet problem. They have an addiction problem. (1997)

Others took a social shaping stance in which the internet was positioned as a contributing factor when combined with other problems:

Our 19-year marriage had been rather rocky, what with career problems, financial woes, children and other pressures. Then, my husband, “Ron,” discovered the chat lines. (1996)

Mark my words, Ann, mid-life and the Internet are an explosive combination that spells double trouble. (1996)

By the end of the 1990s, both columnists took a social shaping perspective on the relationship between the internet and social problems. The technology was seen as enabling some new possibilities for trouble, but the troubles belonged firmly to the people perpetrating the behaviors. Ann Landers eventually wrote that the internet posed a threat to “sterile” marriages (1996), but was not “a ‘killer of marriages’ any more than TV was when it first entered our living rooms” (1998). “Get out the wet noodle,” Landers wrote in her inimitable style, “My readers have convinced me that the Internet, when used properly, has a lot more to offer than I thought” (1999).

Once this more nuanced understanding had been reached, the internet continued to appear as a character in letters to advice columns, but the tone changed considerably. For instance, the writer of a 2004 letter about a fiancé who had placed a personal ad on an online dating site was told that her fiancé “does not understand the responsibilities and obligations of marriage” and that “he might run off with the neighbor’s wife.” In contrast to earlier replies in which Ann and Abby bemoaned an “epidemic” of home-wrecking due to the internet, the internet was not even mentioned in this response. By 2004, it had become almost invisible.

That the internet and mobile phone have been largely domesticated does not mean that all anxieties surrounding them have been resolved. Digital media still appear in advice columns, in *New Yorker* cartoons, in all other popular media, and in everyday conversations. Just as one form of mediated communication becomes domesticated, another arises with some new twist to confuse us. The social concerns that we voice when we discuss technology are concerns we would have even if there were no technology around. They are questions of what it means to be truly yourself, to have meaningful relationships with others, and to be situated in a world of others who are very different from the people with whom we were raised.

Social shaping and domestication differ in where they put the emphasis on the social processes involved in making sense of the technology–society relationship, but agree that the direction of

influence is, at the very least, two-way. Rather than being deterministic, they see the consequences of technology for social life as *emergent*. Even if we knew all the factors that influence us at the start (an impossible feat), we would not be able to precisely predict the social interactions, formations, and changes that result from their ongoing interplay as people use technologies in specific situations.

This book adheres to social shaping and domestication perspectives, arguing that, to connect digital media to social consequences, we need to understand both features of technology and the practices that influence and emerge around technology, including the role of technological rhetorics in those practices. If you turn the page expecting to find simple answers to the question of what computers and mobile phones do to our personal connections, you will be disappointed. They do many things, and which ones they do to which people depends on many forces, only some of which are predictable. As the chapters that follow will show, sometimes these media are used in ways that are predictable given media affordances (people call to say they are running late more because they have mobile phones on hand through which to do it), surprising (the American social network site Orkut came quickly to be dominated by Brazilians and later Indians, Friendster became the dominant social network site in Southeast Asia), disruptive (people form close relationships before meeting in person), and affirming (people use the mobile phone to increase family cohesion). The complexity of the social shaping and domestication perspectives does not mean we should throw up our hands and despair of gaining any insight. We should, however, always be wary of simple explanations.