Understanding Digital Literacies: A Practical Introduction
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Chapter 1

Mediated me

It's hard to think of anything we do nowadays, from working on projects to socializing with friends, that is not somehow mediated through digital technologies. It's not just that we're doing 'old things' in 'new ways'. Digital technologies are actually introducing new things for us to do like **tweeting**, **memeing**, and **gramming**. They have also made new social practices available to people who may not have our best interests in mind, practices like **trolling**, **hatelinking**, and **catfishing**. They have given private companies the ability to track our every move and to use that information to manipulate us. They have given governments an unprecedented ability to monitor their citizens and to disrupt political processes in other countries. They have given unscrupulous politicians a heightened ability to deceive people, to distort reality, and even to call into question the whole idea of 'truth' itself. And they have given ordinary people new ways of harassing, exposing, or terrorising others.

These new practices, both good and bad, require from people new skills, new ways of thinking, and new methods of managing their relationships with others. Some examples of these include:

- The ability to quickly search through and evaluate great masses of information;
- The ability to create coherent reading pathways through linked texts;
- The ability to separate the 'true' from the 'fake' in a complex information eco-system;
- The ability to quickly make connections between widely disparate ideas and domains of experience;
- The ability to shoot and edit digital photos and video;
- The ability to create complex multimodal documents (such as Instagram 'stories') that combine words, graphics, video, and audio;
- The ability to create and maintain dynamic online profiles and manage large and complex online social networks;

- The ability to explore and navigate online worlds and digitally 'augmented' physical spaces and to interact in virtual and 'digical' environments;
- The ability to manage constant surveillance by peers and private companies and to protect one's personal data and 'identity' from being misused by others.

Some people just pick up these abilities along the way by surfing the web, playing online games, posting to social networking platforms, and using mobile apps like Snapchat and WhatsApp. But people are not always very conscious of how these practices change not just the way they communicate but also 'who they can be' and the kinds of relationships they can have with others. They are also sometimes not conscious of the kinds of things others might be using digital technologies to do *to* them, and how their use of digital media can make them vulnerable to exposure or abuse.

The purpose of this book is not just to help you become better at the things you use digital media to do, or to make you better at protecting yourself from those who might be using digital media to do things to you. It is also to help you understand how digital media are affecting the way you make meanings, the way you relate to others, the kind of person you can be, and even the way you think. We believe that the best way to become a more competent user of technologies is to become more critical and reflective about how you use them, the kinds of things that they allow you to do, and the kinds of things they might prevent you from doing.

This book is not just about computers, mobile phones, the internet, and other digital media. It's about the process of *mediation*, the age-old human practice of using tools to take action in the world. In this introductory chapter we will explain the concept of mediation and how it relates to the definition of 'digital literacies' which we will be developing throughout this book.

Mediation

A **medium** is something that stands in-between two things or people and facilitates interaction between them. Usually when we think of 'mediated interaction' we think of things like 'computer-*mediated* communication' or messages delivered via 'mass *media*' like television, radio, or newspapers. But the fact is, all interaction—and indeed all human action—is in some way *mediated*.

This was the insight of the Russian psychologist Lev Vygotsky, who spent his life observing how children learn. All learning, he realized, involves learning how to use some kind of tool that facilitates interaction between the child and the thing or person he or she is interacting with. To learn to eat, you have to learn to use a spoon or a fork or chopsticks, which come

between you and the food and facilitate the action of eating. To learn to read, you have to learn to use language and objects like books that come between you and the people who are trying to reach you through their writing and facilitate the action of communication.

These **cultural tools** that mediate our actions are of many kinds. Some are physical objects like spoons and books. Some are more abstract 'codes' or 'systems of meaning' such as languages, counting systems, and computer code. The ability to use such tools, according to Vygotsky, is the hallmark of human consciousness. All higher mental processes, he said, depend upon mediation. In order to do anything or mean anything or have any kind of relationship with anyone else, you need to use tools. In a sense, the definition of a person is a human being *plus* the tools that are available for that human being to interact with the world.

These tools that we use to mediate between ourselves and the world can be thought of as *extensions* of ourselves. In fact, the famous Canadian media scholar Marshall McLuhan (1964) called media 'the extensions of man.' He didn't just mean things that we traditionally think of as media like televisions and newspapers, but also things like light bulbs, cars, and human language, in short, all **mediational means** which facilitate action. The spoon we use to eat with is an extension of our hand. Microscopes and telescopes are extensions of our eyes. Microphones are extensions of our voices. Cars and trains and busses might be considered extensions of our feet, and computers and smartphones might be considered extensions of our brains (though, as we will show in the rest of this book, the ways computers and the internet extend our capabilities goes far beyond things like memory and cognition).

The point that both Vygotsky and McLuhan were trying to make was not just that cultural tools allow us to do new things, but that they come to define us in some very basic ways. They usually don't just affect our ability to do a particular task. They also affect the way we relate to others, the way we communicate, and the way we think. As McLuhan (1964: 2) puts it: 'Any extension, whether of skin, hand, or foot, affects the whole psychic and social complex.' Cars, trains, and busses, for example, don't just allow us to move around faster; they fundamentally change the way we experience and think about space and time, the kinds of relationships we can have with people who live far away from us, and the kinds of societies we can build. A microphone doesn't just make my voice louder. It gives me the ability to communicate to a large number of people at one time, thus changing the kinds of relationships I can have with those people and the kinds of messages I can communicate to them.

On the one hand, these tools *enable* us to do new things, think in new ways, express new kinds of meanings, establish new kinds of relationships, and *be* new kinds of people. On the other hand, they also *prevent* us from doing other things, of thinking in other ways, of having other kinds of

relationships, and of being other kinds of people. In other words, all tools bring with them different kinds of **affordances** and **constraints**. The way McLuhan puts it, while new technologies *extend* certain parts of us, they *amputate* other parts. While a microphone allows me to talk to a large number of people at one time, it makes it more difficult for me to talk to just one of those people privately, and while a train makes it easier for me to quickly go from one place to another, it makes it more difficult for me to stop along the way and chat with the people I pass.

CASE STUDY: THE WRISTWATCH

Before mobile telephones with built-in digital timekeepers became so pervasive, few technologies seemed more like 'extensions' of our bodies than wristwatches. Sometimes people even think of watches as extensions of their minds. Consider the following conversation:

> A: Excuse me, do you know what time it is?
> B: Sure
> (*looks at his watch*)
> It's 4:15.

In his book *Natural Born Cyborgs* (2003), Andy Clark points to conversations like this as evidence that we consider tools like watches not as separate objects, but as part of ourselves. When B says 'sure' in response to the question about whether or not he knows the time, he does so *before* he looks at his watch. In other words, just having the watch on his wrist makes him feel like he 'knows' the time, and looking at the watch to retrieve the time is not very different from retrieving a fact from his mind.

Before the sixteenth century, timepieces were much too large to carry around because they depended on pendulums and other heavy mechanical workings. Even domestic clocks were rare at that time. Most people depended on the church tower and other public clocks in order to know the time.

This all changed with the invention of the *mainspring*, a coiled piece of metal which, after being wound tightly, unwinds, moving the hands of the timepiece. This small invention made it possible for 'time' to be 'portable'. In the seventeenth century, pocket watches became popular among the rich. Most people, though, continued to rely on public clocks, mostly because there was no need for them to be constantly aware of the time.

It wasn't until the beginning of the twentieth century that watches became popular accessories for normal people to wear on their wrists.

In the beginning, they were considered fashion accessories worn only by women. There are a number of stories about how wristwatches came to be more commonly used. One involves Brazilian aviator Alberto Santos-Dumont, who in 1904 complained that it was difficult to fly his plane while looking at his pocket watch. So his friend, Louis Cartier, developed a watch that he could wear on his wrist, which eventually became the first commercially produced men's wristwatch. According to another account, during WWI, soldiers strapped their watches to their wrists in order to enable them to coordinate their actions in battle while leaving their hands free to carry their weapons. These early wristwatches were known as 'trench-watches,' after the trenches of WWI.

These two examples demonstrate the new affordances introduced by the simple technology of strapping a watch to one's wrist. It allowed soldiers and aviators to do things they were unable to do before, that is, to keep track of time while fighting or flying their planes. Some might even argue that these new affordances contributed to changes in the nature of war as well as the development of modern aviation.

This ability to 'carry the time around' also introduced new possibilities in the business and commercial worlds. The development of railroads as well as the 'scientific management' of assembly-line factories both depended on people's ability to keep close track of the time.

Of course, these developments also changed people's relationships with one another. Human interaction became more a matter of scheduled meetings rather than chance encounters. People were expected to be in a certain place at a certain time. The notions of being 'on time' and 'running late' became much more important.

Along with these changes in relationships came changes in the way people thought about time. Time became something abstract, less a function of nature (the rising and setting of the sun) and more a function of what people's watches said. When people wanted to know when to eat, they didn't consult their stomachs, they consulted their wrists. Time became something that could be divided up and parcelled out. Part of managing the self was being able to manage time. Time became like money. Finally, time became something that one was meant to be constantly aware of. One of the worst things that could happen to someone was to 'lose track of time'.

With the development of electronic watches, portable timepieces became accurate to the tenth or even the hundredth of a second. This new accuracy further changed how people thought about how time could be divided up. Before the 1960s, the second was the smallest measurement of time most normal people could even conceive of.

Ever since the development of pocket watches, timepieces have always had a role in communicating social identity and status. After wristwatches became popular, however, this role became even more pronounced. Many people regard watches as symbols of wealth, status, taste, or personality. It makes a big difference whether or not someone is wearing a Rolex or a Casio. In fact, with the ubiquity of time on computer screens, mobile phones, and other devices, the timekeeping function of wristwatches is becoming less important than their function as markers of social identity and status.

Nowadays, many of the timepieces that people wear on their wrists don't just tell the time, but do other things as well, such as track their steps and their heartbeat, connect them to others via text or voice messages, and remind them about important appointments. The new affordances of 'smart' watches have further altered the way people conceive of space and time in relation to their bodies and their movement through the world. They have also had a profound effect on their social identities and their privacy, allowing them, for example, to share statistics about their physical activities with others, and allowing the companies that make these watches or design apps for them to gather data about their wearers' whereabouts and activities every moment of the day.

The obvious question is whether it was the development of the wristwatch that brought on all of these social and psychological changes, or the social and psychological changes that brought on the development of the wristwatch. Our answer is: both. Human beings are continually creating and adapting cultural tools to meet the needs of new material or social circumstances or new psychological needs. These tools, in turn, end up changing the material and social circumstances in which they are used as well as the psychological needs of those who use them.

Affordances and constraints

As you can see from the case study above, the cultural tools that we use in our daily lives often involve complicated combinations of affordances and constraints, and understanding how people learn to manage these affordances and constraints is one of the main themes of this book. We can divide the different affordances and constraints media introduce into five different kinds: affordances and constraints on what we can *do*, affordances and constraints on what we can *mean*, affordances and constraints on how

we can *relate* to others, affordances and constraints on how or what we can *think*, and, finally, affordances and constraints on who we can *be*.

Doing

Perhaps the most obvious thing we can say about cultural tools is that they allow us to *do* things in the physical world that we would not be able to do without them. Hammers allow us to drive in nails. Telephones allow us to talk to people who are far away, and location-based apps like Tinder allow us to see who is in physical proximity to us, even if they are not close enough to be physically visible. Just as important, they allow us to *not* do certain things. Text messages, for example, allow us to get a message across to someone immediately without having to call them, and 'swiping right' on Tinder allows us to 'flirt' with someone without having to think of something clever to say or risk the potential embarrassment of a face-to-face encounter.

Some of the things that people do with technology are of earth-shattering importance, things like landing on the moon or mapping the human genome. However, most of the things these tools allow us to do are pretty mundane, like sharing photos with friends, using a smartphone app to find a place to eat, or acquiring the 'magical power' that we need to reach the next level in an online game. It is these small, everyday actions that we will be most concerned with in this book. These are the actions that are at the heart of everyday literacy practices and ultimately, it is these everyday practices that form the foundation for greater achievements like moon landings and genome mappings.

Sometimes when individuals are given new abilities to perform small, everyday actions, this can have an unexpectedly large effect on whole societies and cultures. As we saw above, for example, the ability to keep track of time using a wristwatch was an important factor in the development of other kinds of technologies like airplanes, train schedules, and assembly lines. Similarly, your ability to share random thoughts with your friends on Facebook can have an enormous effect on life beyond your social network in realms such as politics and economics.

Meaning

Not only do media allow us to do different kinds of things, they also allow us to make different kinds of meanings that we would not be able to make without them. The classic example is the way television has changed how people are able to communicate about what is happening in the world. Reporting on a news event in print allows the writer to tell us what happened, but reporting on it through a television news broadcast allows the reporter to *show* us and to make us feel like we were there. **Live streaming**

events via social media takes this affordance to another level, allowing viewers to experience things *while* they are happening from the perspective of the people they are happening to. Apps like Twitter allow users—politicians, celebrities, and ordinary people—not just to describe newsworthy things as they are happening, but also to 'make news' by tweeting outrageous or controversial things, and to connect what they tweet to meanings shared by other Twitter users through #hashtags.

The lines of print in a book allow us to make meaning in a linear way based on time—first we say one thing, then we add something else to that. Multimodal content and hypertext, on the other hand, allow us to make meaning in a more spatial way, inviting people to explore different parts of the screen and different linked content in any order that they wish. Apps like Snapchat allow us to incorporate images and videos of our physical surroundings (or our physical body) into our communication, to enhance those images with text, drawings, or filters and 'lenses' that add animated features, and to arrange multiple images into 'stories' (see Chapters 3 and 4).

Media also affect meaning by changing the vocabulary we use to talk about everyday actions. Not so long ago, for example, 'friend' was a noun meaning a person that you are close with. Now, however, 'friend' is also a verb meaning to add someone on a social networking site. In fact, about 25,000 new words are added to the *Oxford English Dictionary* every year, most of them the result of new meanings related to new technologies. In 2015, the Oxford 'word of the year' wasn't even a word, but an emoji (the 'face with tears of joy' emoji, which, as anyone who has used this emoji would tell you, does not necessarily mean 'tears of joy', but can have all sorts of meanings depending on the context of use).

Relating

Different media also allow us to create different kinds of relationships with the people with whom we are interacting. One way is by making possible different kinds of arrangements for participation in the interaction. Does the interaction involve just two people or many people? What roles and rights do different kinds of people have in the interaction? What kinds of channels of communication are made possible: one-to-one, one-to-many, or many-to-many?

A book, for example, usually allows a single author to communicate with many readers, but he or she can usually only communicate to them in relative isolation. In other words, most people read books alone. They may talk with other people who have read or are reading the same book, but usually not *as* they are reading. Also, they normally cannot talk back to the writer as they are reading, though, if the writer is still alive, they might write a letter telling him or her what they thought of the book. The chances of readers actually having a conversation with the author of a book are slim.

Blogs, online forums, and social media sites, on the other hand, create very different patterns of participation. First, they allow readers to talk back to writers, to ask for clarification or dispute what the writer has said or contribute their own ideas. Writers can update what they have said in response to readers' comments. Readers can also comment on the comments of other readers, that is, readers can talk to one another as they are reading.

Even books are different now, with e-books like those available on Amazon's Kindle providing highlighting and comment tools that allow people to engage in **social reading**, interacting with a community of like-minded readers gathered around a particular book.

The internet, with its chat rooms, forums, social networking sites, and other interactive features has introduced all sorts of new ways for people to participate in social life, and people can experience all sorts of new kinds of relationships in online communities. They can **lurk** in communities or become active members. They can 'friend' people or **ghost** them, and create many kinds of social gatherings that did not exist before the development of digital media.

In his famous essay, 'The Relationship Revolution,' Michael Schrage (2001: n.p.) claims that to say the internet 'is about "information" is a bit like saying that "cooking" is about oven temperatures—it's technically accurate but fundamentally untrue.' The real revolution that the internet has brought, he says, is not an 'information revolution' but rather a 'relationship revolution.'

Other than making possible different kinds of social arrangements for participants, media also have an effect on two very important aspects of relationships: power and distance. Technologies can make some people more powerful than others or they can erase power differences between people. For example, if I have a microphone and you don't, then I have greater power to make my voice heard than you do. Similarly, if I have the ability to publish my views and you don't, then I have greater power to get my opinions noticed than you do. One way the internet has changed the power relations among people is to give everyone the power to publish their ideas and disseminate them to millions of people. This is not to say that the internet has made everyone's ideas equal. It's just that more people have the opportunity to get their ideas noticed. At the same time, big media companies like Google still control the means by which different people's content is made prominent and accessible to others through tools such as search engines and recommendation systems.

Finally, when our relationships are mediated through technology sometimes they can make us feel closer, and sometimes they can make us feel more distant from each other. When text-based computer chat and email were first developed, lots of people thought that it would be harder for people to develop close relationships since they couldn't see each other's faces. As it turned out, chat rooms and instant messaging programs seemed to

facilitate interpersonal communication, self-disclosure, and intimacy rather than hinder it. These programs are now used much more for maintaining interpersonal relationships than they are for instrumental purposes (see Chapter 5). Similarly, many commentators in the early days of the World Wide Web held out the hope that digital technologies would bring people together and make everybody more informed. What appears to have happened, however, is that digital technologies have helped to facilitate cultural tribalism and political polarization where different people are 'informed' with totally different sets of facts (see Chapters 2 and 8).

Thinking

Perhaps the most compelling and, for many people, the most worrying thing about technologies is that they have the capacity to change the way we experience and think about reality. If our experience of the world is always mediated through tools, what we experience will also be affected by the affordances and constraints of these tools. Certain things about the world will be amplified or magnified, and other things will be diminished or hidden from us altogether.

One of the first to express this important insight was the communications scholar Harold Innis (1951/1964). Innis said that each medium has a built-in **bias**, which transforms information and organizes knowledge in a particular way. The two most important ways media affect our experience of reality is the way they organize time and space. Some media make information more portable, making it easier to transport or broadcast over long distances. Some media also make information more durable; that is, they make it easier to preserve information over long stretches of time. The philosopher and literary critic Walter Ong (1982/1996) argues that the medium of written language, by making it easier for us to preserve our ideas and transport them over long distances to a large number of people, fundamentally changed human consciousness. In oral cultures, he says, because so much had to be committed to memory, human thought tended to focus more on concrete and immediate concerns and to package ideas in rather fixed and formulaic ways. The invention of writing, partly because it freed up people's memories, allowed them to develop more abstract and analytical ways of thinking and made possible the development of things like history, philosophy, and science.

Some people think that digital technologies are having similarly dramatic effects on the way we think. The optimists among them see computers and the internet taking over routine mental tasks like calculations and acting as repositories for easily retrievable knowledge, freeing up the brain for more sophisticated tasks like forming creative new connections between different kinds of knowledge. Pessimists, on the other hand, see digital technology taking away our ability to concentrate and to think deeply, weakening our

ability to remember things for ourselves and to evaluate knowledge critically, and making us more susceptible to addictive behaviours.

Being

Finally, different technologies have affordances and constraints in terms of the kinds of people that we can be—that is, the kinds of social identities we can adopt when we are using them. Certain kinds of social identities, of course, require that we have available to us certain kinds of technologies and that we know how to use them. If we want to convince others that we are carpenters, then we'd better have access to tools like hammers, saws, and screwdrivers and be able to skillfully use them. In fact, some people would argue that nearly all social identities are a matter of having certain tools *available* to us and having *mastered* how to use these tools. We could also put this the other way around, that when we use certain kinds of tools, we are implicitly *claiming* certain kinds of identities. So when we walk into a lecture theatre and start speaking through the microphone at the podium, we are claiming the identity of a professor, and imputing on those listening the identities of students.

Some tools, however, are not necessarily part of such specialized identities. Using a mobile phone, for example, is not something that is reserved for certain professions or social groups. Nevertheless, when you use your mobile phone you are still showing that you are a certain kind of person. For one thing, you are a person who can afford a mobile phone (which not everybody can). *How* you use your mobile phone also communicates something about who you are. A boss, for example, might be able to answer his or her mobile phone during an important meeting, whereas a lower-ranking employee might not be able to get away with this. You might be enacting a certain kind of social identity just by the kind of mobile phone you use. Are you carrying an iPhone or an Android phone? Is it the latest model or one from two years ago? Finally, the range of apps you have installed on your mobile phone alters its affordances as a tool for enacting your identity. You might, for example, use your phone to take selfies to upload to Instagram, or you might use it to advertise your sexuality using an app like Grindr.

Different kinds of technologies can also help you present yourself as a certain kind of person to others by allowing you to reveal certain parts of yourself and conceal other parts. The privacy settings on Facebook, for example, allow you to share information with some people in your social network while keeping it secret from others. The sociologist Erving Goffman (1959) uses the metaphor of a play to talk about how we present ourselves to other people. Like actors, he says, we have different kinds of expressive equipment—costumes, props, and various staging technologies—which allow us to create a kind of illusion for our audience. This equipment allows us to reveal certain things to our audience and keep other things hidden.

Sometimes we can even reveal some things to some members of the audience while keeping them hidden from others (see Chapter 10).

ACTIVITY: AFFORDANCES, CONSTRAINTS, AND SOCIAL PRACTICES

A. Affordances and constraints

Consider the different kinds of technologies listed below and discuss how they have affected:

1) The kinds of physical things people can *do* in particular situations;
2) The kinds of *meanings* people can express in particular situations;
3) The kinds of *relationships* that people can have in particular situations;
4) The kinds of *thoughts* people can think in particular situations;
5) The kinds of *social identities* people can perform in particular situations.

Traffic Signals Phone Cameras Fitness Trackers 'Like' Buttons

B. Social practices

Now consider these technologies as parts of wider social practices. What other technologies are they usually used together with and in what kind of social situations? How do these other technologies and social situations affect what we do with these technologies?

Creativity

While technologies allow us to do certain kinds of things, make certain kinds of meanings, and think, relate to others, and enact our own identities in certain ways, they also invariably introduce limitations on these activities. Social networking sites, for example, make it easier for us to stay connected to our social networks, but they make it more difficult to maintain our privacy (especially from internet companies, advertisers, and potential 'stalkers'). Caller identification on mobile phones makes it easier for us to screen our calls, but it also makes it easier for calls that we make to be screened by others. Often the constraints of new technologies are less visible to us than their affordances. We tend to be so focused on the things we *can* do with a tool that we don't pay so much attention to the things we *cannot* do with it.

It would be a mistake, however, to regard affordances as universally good and constraints as universally bad. Sometimes affordances of technologies can channel us into certain kinds of behaviour or ways of thinking and can blind us to other (sometimes better) possibilities. Constraints, on the other hand, can sometimes spur us to come up with creative solutions when the tools we have at hand do not allow us to do what we want to do. In this way, the constraints of tools can drive creativity and innovation.

Just because different technologies allow us to do some things and constrain us from doing other things does not mean that technologies *determine* what we can do, what we can mean, the kinds of relationships we can have, what we can think, and who we can be. Despite the affordances and constraints of the tools we use, human beings always seem to figure out how to do something new with them. We appropriate old tools into new situations, and we creatively alter and adapt them to fit new circumstances and new goals. Commenting on how people she knew were using the popular Scrabble-like game *Words with Friends* to find romantic partners, one of Rodney's students said, 'nowadays it doesn't matter what the app is really for—people will figure out some way to turn it into a dating app.'

The psychologist James Wertsch (1993) says that all human actions take place at a site of *tension* between what the cultural tools available to us allow us to do (affordances and constraints) and the ways we are able to *adapt* them to do new things. In fact, managing this 'tension' is an important aspect of the definition of 'literacy' we will develop below and in the rest of this book.

The way we use different tools is not just determined by their affordances and constraints and our own ability to adapt them to different situations. It is also partially determined by the *histories* of the tools, the way they've been used before, and the way people in different communities think they *should* be used. If, after a while, more and more people start using *Words with Friends* as a 'dating app', looking for romantic partners might become something that you are *expected* to do with this app, and those using it without this intention might be considered to be deviant. The media anthropologist Ilana Gershon (2010) calls the sets of expectations about how different media should be used that grow up in different communities **media ideologies**.

Finally, and most importantly, we rarely use media in isolation. We almost always mix them with other tools. As we saw with the example of the wristwatch, using one tool (like a watch) often affects how we can use another tool (an airplane). Sometimes the affordances of one medium can help us to overcome the constraints of another. More and more, in fact, different media are merging together. Mobile phones, for example, have become devices which we use not just to have phone conversations but also to surf the internet, check stock prices and the weather, take snapshots and videos, play games, and even measure our pulse and body temperature. In

addition, many of the apps we use allow us to do many different things. The Chinese social media app WeChat (*Weixin*), for example, allows users to exchange text and voice messages with friends, post personal updates and pictures, find new friends nearby and share their location, pay in shops and on public transport, read the news, keep track of steps and other physical activities, book taxis as well as rail, flight, and hotel tickets, and play games. The app also serves as a platform for 'miniapps' produced by third-party developers.

Therefore, instead of thinking about media in a simple, 'one-to-one' way—a single technology with a clear set of affordances and constraints being used to take certain discrete actions—it's better to think of media as parts of systems of actions and activities, meanings and thoughts, social organizations and identities all linked up through what the media scholars Sarah Kember and Joanna Zylinska (2012: xviii) call 'interlocked and dynamic processes of mediation.' We ourselves and the tools that we use are parts of large techno-social systems in which the affordances of one technology might create constraints in other technologies, the meanings that we are able to make in one situation might make possible new meanings in totally different situations, and the actions that we take now might have profound and unexpected effects on relationships and identities we might form in the future. As Daniel Miller and Don Slater put it in their book *The Internet: An Ethnographic Approach* (2000: 14),

> a central aspect of understanding the dynamics of digital media is not to look at a monolithic medium called 'the Internet', but rather at a range of practices, software and hardware technologies, modes of representation and interaction … not so much people's use of 'the Internet', but rather how they [assemble] various technical possibilities which [add] up to their Internet.

Media utopias and dystopias

People usually have strong reactions when new media are introduced into their lives. This is not surprising since, as we said above, mediation is intimately connected to the ways we go about doing things in our daily lives, the ways we express meaning, relate to others, and even the ways we think. When new ways of doing, meaning, relating, thinking, and being start to develop around new media, it is natural for people to worry that the old ways that they are used to are being lost or marginalized. Sometimes these worries are justified, especially in cases where new media disrupt social norms around things like intimacy and privacy or where the legal, political, and ethical frameworks of a society have failed to adapt.

In the past, whenever new technologies arose, people inevitably expressed concerns. When writing was developed, none other than the Greek

philosopher Socrates declared it to be a threat to civilization. Under the influence of this 'new media', he insisted, people would lose their ability to remember things and think for themselves. They would start to confuse 'real truth' with its mere representation in symbols. Later, when the printing press was developed, there were those who worried that social order would break down as governments and religious institutions lost control of information. And when television became available, many people worried that it would make people stupid or violent or both.

Similarly, with the introduction of digital media in the late twentieth and early twenty-first centuries, many people—including parents, teachers, and newspaper reporters—raised alarms about their possible effects on individuals and societies. Some of these concerns were (and still are) justified, and some turned out to be less so. Interestingly, most of these concerns focused on the five kinds of affordances and constraints that we discussed above. People worried that digital media would take away people's ability to *do* some of the things they could do before, or would allow people to do things that they didn't think they should do. People worried that digital media would ruin people's ability to *make meaning* precisely and accurately with language. They worried about the effects of digital media on *social relationships*, claiming either that people would become isolated from others or that they would meet up with the 'wrong kind of people'. They worried that digital media would change the way people *think*, causing them to become easily distracted and unable to construct or follow complex arguments. And finally, people were concerned about the kinds of social identities that people would perform using digital media, worrying about whether or not these identities were really 'genuine' or about how much of their own identities and their privacy they actually had control over.

At the same time, others who experienced the early days of the internet and digital technologies were extremely optimistic about the way it would affect people's lives, predicting that digital media would bring people together, facilitate democracy and deliberative debate, and power up students' ability to learn. In fact, what has characterized attitudes towards digital technologies over the years has often been a contest between the extremes of **technological dystopianism**, the view that digital technologies are destroying our ability to communicate and interact with one another in meaningful ways, and **technological utopianism**, the belief that digital technologies will invariably make us all smarter and the world a better place.

Now that digital media have been part of our daily lives for over three decades, people are beginning to reassess both their hopes and their fears. Some of the negative effects from digital media that people predicted in the past have not come to pass, while some negative effects that were not predicted did. Few, for example, predicted that the kind of mass surveillance that private companies regularly use the internet to carry out would come to be regarded as 'normal', nor that foreign governments would carry out

information warfare over social media sites. At the same time, while many of the rosy predictions of cyberutopians have not come true, advances in digital technologies have come to benefit people in myriad ways, improving access to information and services for large numbers of people and providing the tools we need to figure out some of the most complex problems that societies face nowadays.

Despite the obvious benefits digital technologies have brought to societies and individuals, and despite the obvious problems that they have introduced, our aim in this book is to avoid trading in technological utopianism and dystopianism, focusing more practically on how mediational means like computers, smartphones, and the internet introduce into our social interaction certain affordances and constraints in particular social contexts and the ability we have to creatively respond and adapt to these affordances and constraints in ways that can increase our individual and collective **agency**.