

CHAPTER 1

UNDERSTANDING NEW MEDIA

Learning Objectives

- To understand the relevant terminology
- To learn about different approaches to the study of the new media
- To critically apprehend the relationship between technology, new media and society
- To learn the main positions of important theorists of technology and media
- To understand and explore the role of e-tivities

Introduction – Why Study the New Media?

Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time [...]. Rapidly, we approach the final phase [...] when the creative process of knowing will be collectively and corporately extended to the whole of human society [...].

Marshall McLuhan, *Understanding Media: The Extensions of Man*, 1964: 3

The media determine our situation.

Friedrich Kittler, *Gramophone, Film, Typewriter*, 1999: xxxix

The excerpt above, from the introduction of *Understanding Media*, reveals McLuhan's vision of the electronic media world: through the media, humanity, fully connected, will collaboratively build and share a global world. The fragmentation and alienation associated with the 'mechanical age', or the age of the industrial revolution, is now replaced with a compulsion to participate and become involved. Kittler's statement is more succinct: all that we are, he claims, is determined by the media. The crucial argument in both theorists is that the media play

a central explanatory role in the shifts and transformations in human history. Understanding media therefore means understanding humanity. We shall examine McLuhan's and Kittler's work in more detail later, but for now, the important issue is that understanding media brings not only an insight into the technologies or devices themselves, but also into societal changes. Understanding new media is expected to lead to an understanding of changes and transformations in social processes, norms, ideas and practices. The media are inextricably bound to society: the study of one requires the study of the other. This book is therefore concerned with tracking and critically examining the changes in society associated with the new media.

The exact nature of the relationship between the media and society is a subject of much debate as we shall see in the relevant section below. But even without reaching any definite conclusions, the increasing centrality of the media, and especially of the *new* media, is clear to all of us. Televisions and radio sets have had a long presence in households in at least the developed world. But the rise of the new media is associated with their ubiquity; they are found everywhere: in living rooms, offices and schools, in the streets, in playrooms and bedrooms. And what's more they are found not only in the so-called developed world, but in developing countries as well. A recent report puts the number of mobile phone users in Africa to 37% of the continent's population, with an annual growth rate of 49% (IT News Africa, 2009). This spread poses a series of important questions regarding society, but also about economic, political and cultural institutions, as well as our experiences. We may want to see these as increasingly, or perhaps even inevitably, mediated (Livingstone, 2009). In other words, the involvement of the new media in society, the economy, politics, culture, the self and experiences is such that none of these escape unscathed. Our goal in this book is to show how all these aspects of life have been articulated with the new media. Understanding new media, in this sense, means understanding how they interact with a series of social, economic, political, cultural and psychological processes, giving rise to a new kind of world. As we shall see, this world may not resemble very closely the one in McLuhan's vision, but it can nevertheless be thought of as a new media world.

What is meant, however, by the term 'new media'? As a first step in the quest for understanding, we need to discuss terms: why new media? Why not digital or online media? The first section of this chapter will discuss terminology. Different terms, we will argue, prioritize different elements and construct different versions, perhaps to the exclusion of some aspects. We will examine the various synonyms and explain why this book decided to adopt the term new media even though they already now have a history of at least 30 years.

Terminology, however, is only part of the story: how and in what ways are the (new) media connected (sometimes quite literally) to society? What is the relationship between the media and society in broader, more theoretical terms? Do they determine society much in the way argued by McLuhan? Or are the media as well as society determined by economic processes, as Marx would argue? These and other hypotheses will be critically examined in the second section of this chapter. The perspective assumed here is that is perhaps better understood as mediation (Silverstone, 2005; 2006), which assumes a dialectical relationship between the media and society.

An explanation of the structure of the book will follow the discussions of terms and theories concerning the new media. The various chapters that make up the book, the reasons underlying their choice, and their main arguments will be summarized in the third section of this chapter. This section will also introduce the concept of the e-tivity (Salmon, 2002). E-tivities form an important part of this book, as they enable readers to acquire a hands-on understanding of some of the issues examined in each chapter.

Why *New Media*?

‘What’s in a name?’ wondered Shakespeare’s Juliet. ‘A rose by any other name would smell as sweet’ (Romeo and Juliet, II, ii, 1–2). Indeed, although we use several names, the question remains: does anything change if we call them new media, online, or digital media? Do they not refer to the same media? Well, Juliet may actually be wrong: different names bring to the fore different attributes, and by prioritizing different elements, they focus attention on some aspects and overlook others. The result is that for all intents and purposes they end up ‘smelling differently’, to use Shakespeare’s analogy. In other words, their outlook, attributes and uses, shift as a result of the names used to apprehend them. In this manner, names do not merely describe them, but construct them as particular kinds of media. A decision on which name to use is therefore quite an important one. In this section we will explain why the term new media was adopted in this book, by discussing the two main alternative terms: digital media and online media.

Digital Media

One of the defining characteristic of the kinds of media under study is that they are digital (Lister, Dovey, Giddings, Grant and Kelly, 2009). This means that all the information or data in these media is encoded in numbers. The most common numerical system used is the binary code of 0 and 1: all information is therefore converted in a series of 0s and 1s. Information such as, for instance, a name, can be represented by any arbitrary combination of numbers. From this point of view, the interpretation of the digital code is independent of its representation. On the other hand, analogue media encode and store information in corresponding physical objects. Thus, sound, text and images elicit analogous responses in vinyl, paper or film. This is a relationship of more or less direct correspondence of encoded information and physical objects, in which information is interpreted in an equally direct manner. For example, words are encoded in a book by pressing metallic letters on paper, and once printed they cannot change. Recorded music is encoded by carving grooves in vinyl.

Lister et al. (2009: 18) refer to four main outcomes of the turn towards digital media. First, media texts become de-linked from particular media. We can now read books on the internet or on Kindle, watch television or films online or on our mobiles, and upload photographs on our blog or hang them on digital frames. This attribute leads to the much talked about media

convergence (e.g. Jenkins, 2006b). Secondly, information can be compressed and fit in very small spaces: there are USB flash drives, for instance, that fit 464 gigabytes (GB) – and there is even a device (E-Disk® Altima™ flash drive) measuring 3.5” that can store up to 1 terabyte (1,000 GB). To understand the magnitude of these measures, 1 gigabyte contains about 4,500 books of 200 pages each, and 1 terabyte can contain more than 4.5 million books! A third outcome of digitalization is that access to data can be very fast and also that it does not have to be linear. Imagine that you have stored all your books in a flash drive or on your computer’s hard disk. You can access any book in this collection in a matter of seconds, and also information within this book without having to flip through all the pages one by one. Finally, a more ambivalent outcome of digitalization is that data can be manipulated in ways unimaginable in the analogue media age. In the Stalinist Soviet Union, disgraced Party members would disappear from official photographs and records through painstaking retouching by photography experts (see King, 1997). Careful examination could easily reveal the falsification of the photographs. Digital photographs have reversed the situation: retouching is available to all of us at a click of a few buttons. While this may be a useful tool for removing ‘red eyes’ from pictures, it can clearly have more sinister uses.

There is no doubt that the process of digitalizing the media has had profound effects. In the EU, the 2012 digital switchover puts a formal end to analogue media. Soon, the process of digitalization will turn all media into digital media. But how does this term fare when it comes to understanding the media? With its emphasis on the mode of encoding and converting data and information, the term digital media seems to focus primarily on the technological element of the media. To talk of digital media therefore appears to prioritize aspects that relate to the technology that made them possible. While the technological element is without doubt important, we have to ask here whether it is the defining characteristic of these media. A possible objection concerns the implicit technological determinism associated with such a position. To posit that the technology is the defining dimension of the media overlooks the ways in which users shape them, or the broader socio-cultural and economic environment which produced them in the first place. We can therefore keep from the term digital the importance of technological attributes, but we also need to add other elements as well.

Online Media

A second term for apprehending the media is to refer or construct them as online media. This is a direct reference to the internet, which is in many ways the prototypical new medium. The term online media prioritizes the element of connectivity, or the ways in which they connect with other media, mainly computers, but also more recently mobile telephones. Connectivity is certainly a crucial attribute of the media under study: the ability to link to distant, and sometimes near, others, one or many at the same time, has had wide consequences. For one, it introduces a shift within modernity, which is typically associated with isolation and individuation (see Giddens, 1991). In addition, it introduces, or perhaps continues and accelerates, shifts in the relatively separate and distinct socio-cultural and politico-economic organization of the

nation-state; such shifts are associated with the process of globalization (see Robertson, 1992; c.f. Chapter 2). To refer to the media under study as online media constructs them as primarily connected media. But is this attribute the defining characteristic of the media? To be sure, connectivity is a crucial element, but focusing on it overlooks the other ways in which we relate to the media. Moreover, connections to distant others were already possible with the telegraph and later the telephone. Online connectivity does not seem to point to a kind of replacement or rupture in the same way that the digital replaced analogue, and from this point of view, the shifts it introduces are more in terms of the quality and degree of connection. In short, the term online media captures another important dimension, but which needs to be thought alongside others.

New Media

We therefore end up with the term new media. There are a lot of issues with this term: it introduces a somewhat arbitrary split between 'old' and 'new' media, it overlooks that 'new' media such as the internet already have a 40 year history, while it also fails to denote any of the dimensions along which the 'new' differ from the 'old' other than their age difference. Yet, these problems, especially the failure to specify what may qualify as a new medium, actually allow us to include attributes such as digital, online and others as well without limiting or prioritizing any single one. In addition, although for some critics the reference to 'new' may appear to disregard the ways in which more mature media have evolved in recent years (Bell, 2009), it denotes a dynamism and penchant for constant change. The term can therefore include all kinds of media formats as long as they are indeed evolving.

But the term new media further signifies a shift in media logic, which denotes a certain degree of novelty. Discussing the new media, Lev Manovich (2001) argued that thinking of them as digital and/or is only half the story: for Manovich these elements may be present in older media forms as well. The new element that points to a significant change in the media is that they are the result of a convergence between the computational logic characteristic of the computers and the communicative logic characteristic of the media. While for Manovich this has the result of the dominance of a specific logic, that of the database, over the communicative logic of the media, we would like here to leave open the question of a dominant logic. We can retain Manovich's idea of the convergence between computational and communicative logic as characteristic of the new media, as this shows the uniqueness of these kinds of media. On the other hand, while to be sure, the database is one kind of logic found in these media, it may be too early to think of it as the prevailing one. Rather, we would like to point out, as argued above, that the term new signifies precisely this openness and struggle between different ideas, users, logics and so on, which seem to be part and parcel of the new media, at least at this, relatively early stage of their existence.

From this point of view, the use of the term new media constructs them as novel, innovative and dynamic. Furthermore, its reluctance to commit to any single attribute or logic as the defining one means that they can all be included as necessary but not sufficient criteria for understanding the new media. At the same time, it recognizes the specificity and uniqueness

of the type of media we are looking at. The choice of this term is therefore more appropriate for a book that seeks to outline the dynamic introduced by these kinds of media and the wider consequences they may have for everyday life. But this presupposes a relationship between the media and society. The next section will examine the theories, suppositions and arguments regarding this complex relationship.

Technologies, Media and Society

The central question regarding (new) media and technology concerns the nature of their relationship with people and society. Do they determine, shape or otherwise influence them? Conversely, do individuals and societal structures produce, use and give meaning to media and technological artefacts? Both sides make convincing arguments supporting their main tenets, but they also share something important: their focus on the pivotal or fundamental role of communication media and the technologies that support them. In this section we will examine the work of four important thinkers of the relationship between humanity and technology: McLuhan, Kittler, Stiegler and Castells. This rather eclectic decision is based on notions of origin and original: McLuhan was the first to prioritize the study of media and technologies, and his work, notwithstanding its many openings, presages some of the more recent developments. On the other hand, the approaches of Friedrich Kittler and Bernard Stiegler are stunningly original and as such especially fruitful in rethinking this relationship in different terms, as well as in developing a coherent and consistent politics of technology, that will then allow us to actively criticize contemporary developments. Finally, the work of Manuel Castells offers an especially useful empirical grounding of some of the more fanciful claims made by theorists of technology.

The focus on these theorists does not mean to imply that they are the only or main ones. The field of knowledge is such that it cannot be conceived or shaped by a few individuals, no matter how gifted they are. Thus theorists such as Lev Manovich, who discussed the logic of the database, Geert Lovink, McKenzie Wark and many others, have made important contributions to our understanding of technology and (new) media. Some of this work will be discussed in other chapters in this book, whose remit is to look into detail in specific areas of mediated life. But this section needs to address the fundamentals of the relationship between technology and society or better humanity. The question here is not only what does technology do, but more fundamentally what are technology and media, and why are they so important for us? For Mark Hansen (2006), the importance of the (new) media does not lie in their attributes, on whether they are digital or analogue, new or old and so on. Rather the crucial issue regarding the media is that they are at the same time artefacts or material devices, as well as 'transcendental', that is, they exist and do things beyond and above their material use. Thinking of the media as material artefacts that not only enable but condition and circumscribe communication raises important questions regarding the mediation of life. With this in mind we can examine the ideas of four major thinkers of new media and technologies.

McLuhan

As with this chapter, a theoretical interrogation of the relationship between the media and society typically begins with Marshall McLuhan. This is because McLuhan is the first theorist to argue that the importance of the media is not located in the contents they circulate but in the form of the media themselves. In fact his somewhat opaque statement that ‘the media is the message’ (McLuhan, 2001 [1964]: 7) can be interpreted in two ways: first it denotes the ultimate priority of media forms, which indeed impart a crucial message, and second, that the contents of any new medium are the old media. To begin with the latter, McLuhan’s argument relies on a somewhat idiosyncratic view of the historical development of the various media. Thus, he considers that speech, orality, was the first ‘medium’ – he is clearly using a widened understanding of the term. Subsequently, the media that evolved, such as written language, contained speech as its contents; the invention of the medium of print used written language as its contents. Cinema then used print as its contents and so forth. Specific messages and media contents are therefore not as important or relevant as the actual medium itself. On the other hand, this kind of cannibalistic behaviour leads straight back to contents as a means for analyzing media. Following McLuhan’s arguments, the contents of the new media incorporate all other previous media (c.f. Levinson, 1999).

But it is the first understanding concerning the primacy of the media that leads to the more radical implications for any media analysis. This is due to the relationship it posits between media, people and societies. McLuhan famously thought that the media are extensions of the human senses. As he put it: ‘all media, from the phonetic alphabet to the computer, are extensions of man that cause deep and lasting changes in him and transform his environment’ (McLuhan, 1969: 54). More particularly, he viewed the media as either extensions or amputations, but nevertheless as inextricably bound to human beings. For McLuhan, the media can extend our senses, but they can also limit them: a medium can amplify or accelerate existing processes or senses (McLuhan, 2001 [1964]: 7), and this is its ‘true’ effect or impact. Examples here include the process of mechanization or the replacement of parts of human labour by machines. The fact that human labour is mediated by machines leads to a fragmentation of previously integrated parts of the process. Similarly, the telephone extends human voice, but it also ‘amputates’ face-to-face interaction – a criticism often faced by the so-called social media in more recent days. In more general terms, the relationship that McLuhan posits between the media and people is one in which the shape or form of the media determines what happens to humans. Humans, or more accurately, the current human condition is seen as the ‘effect’ of media and technology. It’s little wonder that McLuhan faced accusations of media or technological determinism (e.g. Levinson, 1999).

Indeed, it seems that the relationship posited by McLuhan is one in which technology and media cause and determine the changes and directions of human activity, be it social, political or economic. And, moreover, humans are blinded to these effects of the media in the same way that fish are unaware of the water in which they swim: ‘As a result, precisely at the point where a new media-induced environment becomes all pervasive and transmogrifies our

sensory balance, it also becomes invisible' (McLuhan, 1969: 56). There is a sense in all this that humans themselves are led by the media, not realizing the many and varied effects and consequences. The historical evolution of the media according to McLuhan, who in this seems to follow Harold Innis (1950; 1951), is from orality to literacy, from the spoken word to handwritten manuscripts and from there to print and then electronic media (McLuhan, 2002 [1962]). Each media epoch was characterized by different lifestyles, cultures, trends, economies, and also political systems (Innis; 1951; McLuhan, 2002 [1962]). Oral cultures were linked to tribal forms of socio-political organization and relied on the art of memory. Literate cultures, such as the ones by Greeks and Romans, introduced militarism and the exercise of power from far away (empire). The dawn of the electronic media will for McLuhan inevitably lead to the end of the 'Gutenberg Galaxy', print culture and its main characteristics and organizing principles: nationalism, functional differentiation, rationalization, homogenization and alienation – all these are also clear characteristics of (early) modernity. The uniformity of print is in a sense emblematic of the homogenization effected by this kind of medium – McLuhan further adds that the print age has installed a primacy of the visual over the melange of senses mobilized by the oral and manuscript eras. But what of our era: this, for McLuhan, is in transition from the Gutenberg Galaxy to the electronic era. The electronic media usher in a new culture, in which time and space do not matter as much, due to the immediate and interlinked connections drawn by electronic circuits. The main organizing principles characteristic of the 'mechanical age' of the Gutenberg Galaxy will inevitably become extinct: no more nation-states, no more fragmented individuals; rather, we will come together as a community in the global village, linked by a series of interdependencies.

It is clear that for McLuhan the motor of human history is not, as Marx would have it, class struggle, but rather media and technological evolution. Technology and media replace Marx's humanism, but also give rise to important questions: what leads to technological change? If humans and their societies are determined by media, then what accounts for shifts in media themselves? Moreover, and following a Marxian theme, are we all equally affected by the different media ages? McLuhan would perhaps answer that different media instigate a different division of labour, but the absence of these explicitly political considerations earned him many an intellectual enemy (see for instance, Enzensberger, 1970). Perhaps some answers are found in the work of Friedrich Kittler who relies on, and extends, McLuhan's thought.

Kittler

'The media determine our situation' is the opening line of Friedrich Kittler's *Gramophone, Film, Typewriter* – a statement boldly reiterating McLuhan's 'the medium is the message'. But Kittler's work is much more subtle and nuanced than this statement conveys. His argument fuses Foucauldian archaeological analysis and Lacanian structural psychoanalysis with the media and their technologies in unexpected ways. Foucault famously argued that notions, institutions, disciplines and even selves that appear 'natural' are in fact all constructed, and they form the culmination of years of operation of certain discursive principles and formations,

and they reveal the operation of power (see e.g. Foucault's *The Order of Things* (2002 [1966]), *Power/Knowledge* (1980), *The Archaeology of Knowledge* (1989 [1969])). Discourse – or a series of signs, written, spoken or otherwise conveyed – is placed at the centre of such constructions. The job of an 'archaeologist' or later 'genealogist' of the social world is to find the constitutive elements of the issues, subjects, disciplines they are analyzing. Lacan, on the other hand, focused on the way in which subjects or selves become who they are through the operation of linguistic principles (Lacan, 1980 [1966]). Kittler now draws upon these insights arguing that it is well and good to look at languages and their combination into discourses, but we must not overlook the media or the technological networks that made specific kinds of languages and discourses to emerge and assume primacy. Kittler views such languages and discourses more broadly as information and argues that to understand our present condition, we must take into account the ways in which this information is processed and stored. He refers to such configurations as 'discourse networks', which he more specifically defines as networks 'of technologies and institutions that allow a given culture to select, store and produce relevant data' (Kittler, 1992: 369). Kittler then proceeds to a historical periodization resting on the one hand on McLuhan and on the other on Foucault (2002 [1966]).

In his book *Discourse Networks 1800/1900*, Kittler (1992) describes the network of 1800 with the period of alphabetization, which relied on writing as the only means of processing and storing information. All other kinds of signs, sounds, images and so on, had to go through written language in order to be stored. This discourse network was linked to Romanticism as written language was in the first instance a 'technology of symbolic encoding' (Translators' Introduction: xxv), and was primarily associated with literature. Literature, and poetry, was then interpreted as the exteriorization of an inner voice, which sought to capture feelings and ideas in an 'authentic' way. The monopoly of writing was broken by the invention of other media, such as Edison's phonograph and kinetoscope, which allowed the recording and broadcasting of voices, sounds, and images. Remington's typewriter, which was invented at around the same time (1900), constituted the third medium described by Kittler as part of the discourse network 1900. This network revolved around inscription technologies, and was no longer representing the 'inner voice' but rather exteriorized modernity's need to control, rationalize and record data in a standardized manner. Kittler supports his arguments with references to Nietzsche, one of the first authors to use a typewriter, which then made him realize the shift involved: from the expression of 'inner voices', the individuality and idiosyncracies of writing (by hand) to standardized typography, from an agent of writing to a surface for inscription (Kittler, 1992: 210). The next move, one which Kittler has yet to complete, involves the passage to digitalization, which subverts the serial inscription of data, and leads to new forms of subjects. However, discourse networks can only be methodologically approached retrospectively preventing Kittler from a formal description of a discourse network 2000 (see Kittler and Johnston, 1997: 7)

These links between media technologies and consciousness or subjectivity show the importance of the media, and justify Kittler's statement that the media determine our situation. They do so by virtue of providing us with the material artefacts by which to write, communicate or otherwise understand ourselves and the world around us. There is a clear

anti-humanist stance in Kittler, as there is no room for human subjects as the agents of history in his account – rather humans appear as the end result of historically located mediations: romantic, ‘authentic’, close-to-nature mediated through handwriting, and industrious, rationalized units (individuals) mediated through the technologies of inscription. The same questions as with McLuhan inevitably arise here as well: what about human agency? What may explain media emergence, change and evolution? Kittler’s argument, following a Foucauldian understanding of power as enabling (Foucault, 1980), is that technologies make people: that is, media and their technologies make possible the kind of people that we are, and the kind of societies that we have. But then people, enabled by the media, feedback into them thereby leading to shifts and changes, which in turn produce different media technologies, different subjects, different societies and so on. To clarify this point further, in their introduction to Kittler’s *Gramophone, Film, Typewriter*, Geoffrey Winthrop-Young and Michael Wutz (1999: xxxv) use the analogy of the Marxian conception of the dialectics of base-superstructure. In Kittler’s work, the media-technological ‘base’ is dialectically related to the discursive ‘superstructure’; this dialectical relationship means that there are tensions and conflicts that give rise to new technologies, new media, new discourse networks. The ‘motor’ of history therefore is technology rather than humanity.

But do humans have any power at all? Where does this leave the politics of technology? In two influential and provocative essays, Kittler declared that ‘there is no software’ before moving on to discuss the implications of the ‘protected mode’ of software (Kittler, 1997a; 1997b). He begins by pointing to the explosion of commercial software, which in turn conceals the implosion of hardware. Digitalization means that all underlying operations are reduced to binary code and are hidden from our eyes, which see only the interface of the software we are using. All words that we see appearing in front of us on our word processing program are reduced to 0 and 1, and the voltage difference between them. The use of software and graphic user interfaces ends up obscuring the operations of hardware, which we, as users, never see or understand. This in turn makes us dependent on software companies which seek to acquire a monopoly not only over their own programs-products but also on the knowledge of technical innovations that underlie hardware. From this point of view, software operates as a kind of cryptography, which has strategic functions, mainly to offer a sustained economic advantage to software corporations. For Kittler, because software does not exist independently of hardware or machine, it insists even more vocally that it qualify as property. This has two related results (see also Harris and Taylor, 2005: 85): first, to hide that software is the result of a collective endeavour and not a commodity, and second, to hide the operations by which software giants produce subjects or ‘end-users’, at the same time obscuring the ways in which they become subjugated. ‘End-users’ are therefore analogous to the 1800s readers and to the 1900s audiences. They are constrained by the combined operations of both hardware and software, even as they seem to make their life easier. A relevant political response would therefore entail the engagement with all those operations that obscure the actual ways that subjugate us, that make us subjects. The task of critical analysis is precisely to show the ways in which humans and societies are constructed, and that includes not only the logic of software but crucially also the processes and coded routines of

hardware. This is Kittler's answer to, and to an extent continuation of, Foucault's genealogical analysis, which he terms information materialism (Kittler, 1997a; 1997b; see also Gane, 2005). Through this method, Kittler seeks to identify the rules or algorithms that guide the transformation of information into material objects (and subjects) and vice versa. Finding the codes, rules and algorithms which govern us as subjects and the material-informational world around us will not offer mastery, but it will at least help us understand that we cannot think of ourselves as masters of the world (Winthrop-Young, 2006).

Kittler's account offers a valuable insight into the role played by technology, by hardware and algorithms in determining life, society and culture. But to accept the primacy of technology appears to reduce the role of human agency: we may not be 'masters and commanders', but we are agents, capable of reflexive and purposeful actions. What appears necessary is therefore an account of technology that does not discount the role of humanity. It is to Bernard Stiegler, the French philosopher of technology, that we turn to find such an account.

Stiegler

The post-humanist strand evident in McLuhan and more clearly in Kittler is also present in the work of Bernard Stiegler. However, while for both McLuhan and Kittler the relationship between technologies-media and humanity-society is one of determination of the latter by the former, Stiegler argues that technology and humanity are coeval or co-originary. Rather than prioritizing technology as McLuhan and Kittler do, Stiegler shows that humans and technology are inextricably bound, they belong together and co-determine each other. This coexistence of humanity and technology is important because it allows us to think of the evolution of both at the same time, without necessarily prioritizing one over the other. It therefore eschews on the one hand the anthropocentric views of technology and media as a tool in the hands of humans, and on the other hand the media-centric views of humans as determined by technology.

The central problem posed by Stiegler in his four-volume work *Technics and Time* concerns the role of 'technics'. The term technics refers to the object of technology, and more specifically to the domain of skills as opposed to episteme, the domain of knowledge. For Stiegler, all human action relates to technics (1998: 94). But what is the relationship between humans and technics, or skills and tools? Stiegler makes use of Derrida's (*Of Grammatology* and *Of Spirit*) insight on prostheses or supplements to humans as ever-present. Derrida showed that the philosophical move to isolate thought (the 'essence' of humanity) from technics or the technological means (supplements) by which it is articulated is in fact impossible: speaking, writing, printing, and crucially, archiving are always there when thought is articulated. Thought, life or even nature cannot be understood without technics: this is what Derrida terms prosthesis of/at the origin or 'originary technicity' (*Of Grammatology*, 1974/1997). Richard Beardsworth (1996: 149) views in this originary technicity Derrida's understanding of human identity: it is locked in the relationship between humans and their supplements so that humans can never be identified with their supplements – they always differ – but also this relationship can never be pin-pointed and captured once and for all (it is always dynamic, deferred). Technicity and technics for Derrida

are constitutive of humans, a process which he calls hominization. Derridean deconstruction is therefore the method by which we can find the various processes of hominization.

Stiegler takes over from Derrida expanding but also criticizing his work. He argues that deconstruction needs to become more oriented towards history on the one hand, and towards the materiality of technology on the other. While Derrida theorized abstractly and formally the deferred and different relationship between humans and technics, Stiegler proposes a historically informed account of this relationship, based on the materiality of technology, that is, on the different material forms that technology takes. We can then recognize concretely the various 'hominizations' and we can also articulate a politics of technology.

Following through these arguments, Stiegler begins with an anthropology of technology drawing upon the work of palaeontologist Leroi-Gourhan (1993). Concerned with the problem of human evolution, Leroi-Gourhan argued that humans evolved due to their assumption of the upright position, which then freed their hands for making and using tools. Technology is then seen as a particular kind of memory, a third kind, alongside genetic memory (DNA) and physical memory (nervous system). What characterizes humanity is therefore precisely this third kind of memory, seen as technology, which is also an exteriorized kind of memory as it resides in material objects. For Leroi-Gourhan, anthropogenesis (the 'birth' of the human species) is technogenesis (the 'birth' of technology). But Stiegler criticizes Leroi-Gourhan as not going far enough: in his account, Leroi-Gourhan still gives priority to the human cortex, thereby in effect prioritizing biology over technology. For Stiegler, if we are to speak of originary technicity, the coeval evolution of humanity and technology, then we must understand the cortex and technology, the 'interior' and 'exterior' as mutually and concurrently inventing each other. In this account, the cortex, which refers to reflexivity and ability for symbolic thought, is 'exteriorized' through technology, which then enables and preserves this reflexivity and capacity for symbolism. Stiegler calls this process, the coupling of humanity with technology, epiphylogenesis: 'a recapitulating, dynamic, and morphogenetic (phylogenetic) accumulation of individual experience (epi)' (Stiegler, 1998: 177). While all forms of life are endowed with an individual and a species-specific capacity for memory, humans can conserve and pass on their individual memory even after their death. Epiphylogenesis, the ability to capture and relive human memories and experiences through artificial (technological) means, is not only uniquely human (a condition for hominization in Stiegler's terms), but also the main way in which humans evolve: an evolution that is at once biological and technological. Language is seen as a perfect example of epiphylogenesis: we acquire language as a skill and therefore a technique. Language has its own history and memory that pre-existed us, but which then is taken over by us as individuals, and we carry it into the future (Vaccari and Barnet, 2009). Epiphylogenesis represents the cumulative cultural and historical experiences of humanity, which are preserved and located (and of course also shaped by) technological artefacts. As Vaccari and Barnet put it: 'There is history, there is culture, and there are the artefacts which carry them beyond our death: technics' (2009, unpaginated).

Precisely because the relationship between technology and humanity is one of a dynamic mutual composition (Stiegler, 2006), what is at stake is nothing less than the future of humanity.

Stiegler argues that technical objects are the exteriorization of memory-thought, which then condition and circumscribe the 'interior', this very memory and thought. But this dependence on such mnemonic devices, as Stiegler (2006) calls them, entails loss of knowledge, which is then displaced and moved onto these technological objects. Losing our mobile phone, to use Stiegler's (2006) example, means losing all our contact numbers, which are no longer in our memory. Equally, consider the loss of the aptly named 'memory stick', which involves the loss of stored knowledge that we cannot retrieve from our memories. And here we must think, argues Stiegler, what this entails for our future. When in new technologies all the 'know-how' is 'exteriorized' and stored in devices controlled by others (e.g. corporations, governments, armies etc.) then we are faced with two effects. On the one hand, this entails a kind of 'human obsolescence', the deskilling and consequently the 'proletarianization' of more and more humans, who after this loss of knowledge become fit only for consumption. On the other hand, we find the assumption of more and more power by the cognitive and cultural industries that run today's societies of control (Stiegler, 2006: 18–19). For Stiegler, this leads to a politics of memory, a struggle for control of these technological mnemonic devices. This politics must proceed with an analysis of 'grammatization', the term used by Stiegler (2007) to refer to the ways in which the continuous 'flows' of life are encoded into discrete units: for instance, writing is the grammatization of the continuity of speech, while industrialization entailed the grammatization of the gestures of workers, which from continuous became discrete and from integrated they became fragmented. A relevant politics must therefore look into these processes of grammatization, and how they circumscribe life with a view to found 'a new political economy of memory and desire' (Stiegler, 2006: 41), able to address and expand the limits set by the various 'grammatizations'.

It is clear that Stiegler's work offers a new and fascinating account of the relationship between humanity and technology, between (new) media and society, which accepts the dynamic character of the relationship, while also acknowledging the close and inextricable connections of technology and humanity. However, Stiegler's analytical project (as with Kittler) is primarily a historically oriented one: it is a kind of genealogy of technology-humanity, rather than a sociology. A sociology of new media and technology, on the other hand, can provide detailed and empirically rich information on all areas of life, which can then enable us to better understand the present. Such a sociologically informed account is offered by Manuel Castells.

Castells

While Stiegler proposes a new and radical conception of humanity as always already technological, and McLuhan and Kittler view humanity as determined by the media and technologies, none of these theorists were concerned with a sociology of the new media and technologies, in the sense of looking systematically into the articulations of specific media with specific societies in an empirically informed manner. This is the task undertaken by Manuel Castells in his three-volume work on the network society collectively titled *The Information Age: Economy, Society and Culture* (Castells, 1996; 1997; 1998). In this body of work Castells seeks to empirically

apprehend the changes in contemporary societies precipitated by the new media and technologies. Castells is careful to avoid accusations of technological determinism but he is also keen to show the effects that new technologies have in our lives. We can then say that he is assuming a kind of agnostic stance vis-à-vis the relationship between society and technology, while he seeks to empirically apprehend the recent societal shifts associated with new technologies and their media. Since he is still prioritizing the study of technology though, his position can be described as 'soft determinism' (Lister et al., 2009). Castells himself has argued that:

Technology does not determine society. Nor does society script the course of technological change, since many factors, including individual inventiveness and entrepreneurialism, intervene in the process of scientific discovery, technical innovation and social applications, so the final outcome depends on a complex pattern of interaction. Indeed the dilemma of technological determinism is probably a false problem, since technology is society and society cannot be understood without its technological tools. (Castells, 2000 [1996]: 5)

From this point of view, his position stands closer to that of Bernard Stiegler, but without the extensive theorizations to support it.

Castells' main argument is that new technologies are associated with a new form of social organization, which revolves around the idea of the network. Our societies can therefore be understood as network societies, based no longer on the individual, or on the traditional community as in previous societies, but on the network. In his first volume, *The Network Society*, Castells explained that 'as a historical trend, dominant functions and processes are increasingly organized around networks. Networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power and culture' (2000 [1996]: 469). A network is seen as a structure comprised of different, but interconnected points – this structure has come to replace both the individual and the nation-state as the primary form of social organization. And because this 'new morphology' is not limited by geographical conceptions of space and associated limits of time, Castells argues that we have entered a new era, enabled by new electronic technologies, in which space is a space of flows and time is timeless.

Expanding on his arguments, Castells argues that space is the outcome of social construction: understanding the world around us is not so much a matter of perception (as, for instance, McLuhan would have it), but rather the outcome of a social ordering of things. From this point of view, electronic media effectively introduce a new ordering, which has made possible a different conception of space. This new concept of space is then defined not by relations of geographical contiguity but by the exchanges between the different places in which actors are found. Castells suggests that the space of flows has three layers: the first is the layer of electronic circuits which enables materially the space of flows. The second is the layer of nodes or hubs: the disjointed places that set up a network and support exchanges and interactions between actors occupying these places. Finally, the third layer refers to the spatial organization

of dominant elites, which directs and articulates the space of flows: for Castells, the space of flows is not the only spatial logic in society; but it is the dominant one because it is used by the global elites. These elites are cosmopolitan, moving across places, but held together through occupying certain spaces: these include secluded residential areas as well as leisure-oriented spaces, which are made to look more or less identical despite their actual physical location.

Time within the space of flows is timeless. The 'linear, measurable, predictable time is shattered in the network society', which is characterized by a compression of time to such an extent that it makes time disappear (Castells, 2000 [1996]: 464). To understand this concept we can refer to the sequence of time that characterized the premodern era: this was determined by the seasons and their influence on agricultural production. Modernity introduced a different time, ordered by divisions between working time and leisure time, while working time was subjected to 'scientific management' (Taylor, 1911) to make it more efficient. The temporal organization of the network society, in contrast, negates time in the sense of eliminating the sequencing of time; for example, the global financial market operates in real time, exchanging massive amounts of capital in mere seconds. Castells argues that timeless time operates only where technology has given rise to 'systemic perturbation in the sequential order of phenomena' (2000 [1996]: 494). Such perturbation may take the form either of near-instantaneity or of random discontinuity. In both cases, time can no longer be ordered sequentially, thereby leading to undifferentiated time. Although Castells accepts that biologically and socially ordered time still apply, timeless time belongs to the space of flows.

These two parameters, the space of flows and timeless time, give rise to the network as the main way by which technologically advanced societies are ordered. Thus, economy becomes increasingly organized through networks and flows between them: networks of finance and companies; and networks of work projects that operate flexibly, on an ad hoc basis, coming together as and when necessary and dissolving or becoming obsolete when they are no longer needed. The politics of the network are increasingly mediated politics, where ideas and ideologies give way to communicative abilities as the main means by which to seek and legitimate power. The society of the network is not characterized by the organic solidarity of modernity, in which people within nation-states depend on each other on the basis of their functional differentiation (Durkheim, 1933 in Giddens, 1972). Rather, the bonds between people in the network society are tenuous and temporary, often based on common views and beliefs, uniting people across borders, but equally fragmenting them within given places.

Apparently unconcerned with abstract theorizing of the nature of the relationship between technology and society, Castells rather assumes that the new media represent a given historical articulation. Insofar as they have enabled the new social configuration of the network, they are linked to shifts in social, cultural, political and economic processes, and from a sociological point of view, it is important to detail these shifts. This view prioritizes empirical over theoretical perspectives, or at least it sees theorizations of new media and society as stemming from empirical investigations of different areas of life. Notwithstanding the insights of theorists such as Kittler and Stiegler, this book will closely follow Castells' more sociologically oriented perspective. On the other hand, empirical investigations already involve some theoretical assumptions

that need to be made clear. This book therefore assumes an overall theoretical stance that follows Stiegler's ideas on the mutually determining relationship between humans and technology, while seeking to enrich these insights with discussions of empirical findings and studies.

To acknowledge the dynamism and irreducibility of the couple humanity-technology means that while technology is always there, its new manifestations lead to shifts in existing areas of life, spanning from the economic, to the psychological. These are not determined by technology as such, but by the mutually conditioning relationship between human agents and technological artefacts. Similarly, shifts in the economy, culture and so on bring about changes in technologies as well. More recently, this kind of relationship, or better process, has been termed mediation (Silverstone, 2006; Couldry, 2008; Livingstone, 2009). Mediation can be understood as the dialectical or at least dynamic interaction between media (and the technologies and artefacts that support them) and aspects of life, including self and subjectivity, society and culture, economy and politics. To speak of mediation as a dynamic process requires that no single component assumes priority but that they are all involved albeit often in an asymmetrical or unequal way (see Couldry, 2008). Moreover, to speak of the technological mediation of society requires that we examine a series of fields of life to find out exactly what the results of this process are at this historical juncture. Thus, in this book we will examine the ways in which various areas of life have changed since the spread of the new media. These areas and the rationale behind their choice will be outlined in the next section. This will discuss the structure of the book, the chapters that make it up, as well as the ways in which readers are invited to engage with the contents.

Structure of the Book

The structure of the book is based on the idea that the new media require not only analysis on their main features and characteristics but also an in-depth understanding of their articulations of various areas of life. This does not mean that the new media have unilaterally caused changes and shifts in areas such as the economy, sociality and so on. Rather, by becoming associated with them, an altogether new situation is created. Following Stiegler, the book is not so much looking at the new media themselves, but understands them as 'exteriorizations' of contemporary subjectivity, culture, society, economics and politics. There are bound to be areas that are not covered at all, or covered only very schematically. But the objective of this book is to introduce readers to the various shifts in various areas of life which are associated with the new media, rather than to exhaustively cover everything. Each chapter is meant to be autonomous in relation to others, but all follow along similar theoretical lines, relying heavily on Manuel Castells' ideas of the network society and informational capitalism. The broad outlook of the book is a social scientific one, although some ideas from media and cultural studies are also included. In the end, it is hoped that readers will have acquired a good sense of the direction our societies are taking, of the ways in which the new media have become embedded into various aspects of our lives, and should also become critically aware of some of the not-so-positive developments associated with the new media.

The book begins with a discussion of the broader areas of life, before moving on to the social, cultural and socio-psychological: the logic is that we discuss the various themes beginning from the broader areas, such as globalization and economics, which introduce topics central to the book, such as the network society and informational capitalism, and then move on to a discussion of more specific themes, such as the digital divide, politics, journalism and so on. Thus, Chapter 2 begins with one of the most general themes of the book: the relationship between globalization and the new media. This chapter is concerned with the ways in which theories of globalization understand the role of technologies and new media and, conversely, the ways in which the new media have contributed to the globalization of the economy, society, culture and politics. Chapter 3 follows on some of the points raised in Chapter 2, looking at the economy, and the various ways in which it has become entangled with the new media, leading to the rise of what is known as informational capitalism.

Chapter 4 initiates the discussion of more specific themes, by looking at the divisions created by the new media, as well as the various patterns of consumption that have emerged. This will help us understand the spread of the new media across the world, as well as the various cleavages that structure society and their relationship to the new media. Chapter 5 looks at developments in politics and the way the political process has been mediated by the new media: the changes as well as potential of the new media is discussed alongside the continuities and attempts to co-opt the new media by formal and traditional politics. Chapter 6 acts as a corrective to over-optimistic and near-utopian ideas on the new media, by examining the 'dark side' of the new media, focusing on issues of surveillance, safety and security, looking at conflict, fraud and extreme pornography. Chapter 7 moves on to discuss the shifts in journalism associated with the new media: have the new media caused or precipitated the crisis in journalism, or have they, conversely, led to an altogether new kind of journalism?

Chapter 8 examines mobile media and the shifts that mobility and portability introduce to our everyday lives: the rise and rise of mobile media is linked to profound changes in the ways in which we lead our lives. Chapter 8 further acts as an introduction to the next two themes of the book: identity and sociality. Specifically, Chapter 9 discusses identity, and the ways in which our subjectivity is mediated and constructed through and in the new media. It further examines social identities, such as gender and ethnicity and their articulation with the new media: have the latter ushered in new possibilities for emancipation, or are they merely reproducing stereotypical ideas about gender and ethnicity? Next, Chapter 10 looks at society and community, and examines the new socialities that emerge out of the migration of social life in online, mediated environments. Chapter 10 further looks into the so-called social media: since the vast majority of new media users are also using social media, such as Facebook, Twitter, YouTube and so on, it becomes imperative to study their increasingly important role in social life. Chapter 11 looks at games and gaming, understanding games culture as emblematic of the culture of the new media. Online and computer games are much more than entertainment: they are part of an industry that in many ways reproduces the main principles and values of informational capitalism, thereby

deserving special consideration in a discussion on new media. Finally, Chapter 12 rounds up the main arguments and findings of the various chapters, and then looks at the future of the new media, examining some trends and new directions that might shape the future of the things to come.

All in all, this book provides a theoretically and empirically informed introduction to the various socio-cultural, political and economic shifts associated with the new media. Its perspective seeks to be critical but pragmatic: critically understanding and evaluating social changes, while refraining both from any nostalgia for a lost organic world, as well as from utopian, futuristic positions of a 'friction-free' techno-world. But another ambition of this book is to enable readers to engage with the material presented through a series of exercises, called e-tivities. The following section will explain these in more detail.

E-tivities

This book adopts Gilly Salmon's idea of e-tivities as a means by which to enhance learning (see Salmon, 2002). The main idea behind e-tivities, and also behind all kinds of learning, is that we learn more if we are actively engaged in the process. E-tivities offer active online learning experiences to readers of this book in ways that seek to improve and deepen understanding of the main issues involved. They make use of online resources, and also of two key features of Web 2.0: participation and collaboration. Learning is not necessarily a solitary experience: we can learn through reading books, but we can also learn from others and with others, as parts of a group that actively explores ideas and themes, that work with each other to gain a more in-depth understanding through participation and immersion in relevant online environments.

Salmon (2002) identified four main features characterizing e-tivities. First, they begin with a 'spark', a question, a challenge, or a small piece of information. This is followed by, second, online activity by individuals, which then is communicated to others who are expected to respond. This interaction is the third feature, while, finally, the fourth element is the feedback or response by a moderator. A moderator, often a more experienced member or leader of the group, will offer feedback to the learners' comments or posts and will gauge the extent to which the 'spark', the question or challenge has been addressed. As such, e-tivities involve both individual and group activities, while they further entail feedback and critique from a more experienced participant.

The chapters of this book have incorporated such e-tivities but adjusted them to the requirements of the book. Each chapter offers a 'spark' that challenges readers to explore more certain avenues or themes within each chapter. Since this book is primarily addressed to students of new media, the idea is that some of these e-tivities be adopted and developed further in class. But if not, then individual readers can still follow through and extend their learning beyond the written pages in front of them. Thus while the interactive and feedback elements can be easily provided for in class blogs or even in more protected online environments, such as Blackboard,

the e-tivities in this book can stand alone, for use by readers in their own time, through exploring areas of interest.

E-tivities (after Salmon, 2002): enhanced learning experiences

Key features:

- A challenge or question (the ‘spark’)
- Exploration of relevant issues and posting of comments in online environments
- Responses by other group or class members (again through posts in a class blog)
- Feedback by the moderator or class leader

Main benefits:

- Learning through interacting with the material
- Learning through participation and collaboration
- Learning through experiencing issues first hand
- Can be used both as solitary explorations and as group exercises

Conclusions

This chapter was primarily concerned with offering an exposition of the basic tenets of four important thinkers of the new media. Before discussing their positions, the chapter referred to some issues of terminology, and explained the reasoning behind the adoption of the term ‘new’ media. Even though these ‘new’ media aren’t so new any more, the term was adopted here because it points to the dynamic and evolving features of the media rather than the technologies that enabled them. Sure, they are all digital, but how does this help us understand some of their differences? For example, focusing on the digital or online aspects of the new media does not allow us to understand the subtle ways in which Web 2.0, for instance, has introduced shifts even within these digital media.

Next, this chapter summarized the positions of four main theorists of the new media: Marshall McLuhan, Friedrich Kittler, Bernard Stiegler and Manuel Castells. From McLuhan, we got his insistence on the importance of the media, and their contribution to how we perceive the world. Kittler expanded on these ideas and prioritized technology even further, arguing that human history is the history of technology: the media makes us subjects. Stiegler on the other hand addressed the ‘who comes first’ conundrum by arguing that humanity and technology are co-originary, they belong together and you cannot have one without the other.

True, therefore, we make technology, but technology also makes us. Castells, finally, inserts a much needed empiricism into the discussion, as he looks at the empirical shifts observed since the advent of new media technologies. These, he argues, can be understood as the rise of the network, itself only made possible through the new media. The boxes below (1.1–1.4) summarize the main points of all these theorists, while the chapters that comprise this book will explore some of these themes in more detail, making use of the insights of all these thinkers.

1.1

McLuhan – Summary of Main Points

Position on Technology:

- Media and technology assume priority
- New media use media as their contents
- The media are the message

Position on Humanity:

- Media as ‘extensions of man’, causing lasting changes

Position on Society and Politics:

- Media and technologies leading to different forms of socio-political organization

1.2

Kittler – Summary of Main Points

Position on Technology:

- Technological evolution as the motor of history
- Different technologies lead to the constitution of different discourses and power configurations
- Hardware crucial – ‘there is no software’
- Emphasis on the materiality of technology

Position on Humanity:

- Different media lead to different subjects:
 - discourse network 1800: readers
 - discourse network 1900: audiences
 - discourse network 2000: end-users
- An anti-humanist perspective

Position on Society and Politics:

- Should focus on the genealogy of discourses to show how we are constituted, but no possibility of mastery over technology
- Should engage with hardware, the algorithms that underlie the user-friendly interfaces

1.3

Stiegler – Summary of Main Points

Position on Technology:

- Technology as an ‘exteriorized’ memory, a third kind alongside genetic memory (DNA), the nervous system memory (epigenetic), termed ‘epiphylogenetic’, because it gives rise to new forms and it has a history, it is cumulative and shapes or influences the future

Position on Humanity:

- Technology and humanity belong together, they appear at the same time. Technology is what distinguishes humans from previous kinds
- ‘Hominization’, the process whereby we are made into humans seen as a result of a dialectic with technology: technology makes us human, and we make technology

Position on Society and Politics:

- Instigates a new politics of technology as a politics of memory
- Looks into the effects of the control of epiphylogenetic devices by corporations, and the loss of skills involved, the proletarianization of people
- An explicitly political account

1.4

Castells – Summary of Main Points

Position on Technology:

- Technology viewed from an empirical point of view as enabling certain configurations

Position on Humanity:

- Technologies linked to new kinds of identity

Position on Society and Politics:

- More descriptive than theoretical or political
- Society turned into a network society with new conceptions of space and time

Further Reading

Getting to grips with complex social theory of the new media can be challenging. These three interviews with Kittler, Stiegler and Castells, provide a basic introduction to important concepts, ideas and views that have shaped their theories.

Winthrop-Young, G. and Gane, N., 2006, Friedrich Kittler: An Introduction, *Theory, Culture & Society*, 23(7–8): 5–16.

Venn, C., Boyne, R., Phillips, J. and Bishop, R., 2007, Technics, Media, Teleology: Interview with Bernard Stiegler, *Theory, Culture & Society*, 24(7–8): 334–341.

Rantanen, T., 2005, The message is the medium: An interview with Manuel Castells, *Global Media and Communication*, 1(2): 135–147.