# SOCIAL MEDIA

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# SOCIAL MEDIA

## A CRITICAL INTRODUCTION

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## KEY QUESTIONS

- What does it mean to be social?
- What kinds of social theories exist?
- How can social theory help us to understand what is social about social media?
- How social is the web?
- What is big data? How is it related to social media? What are its implications for society and academia?

## KEY CONCEPTS

Internet
Social media
Web 1.0
Web 2.0
Web 3.0
Émile Durkheim's notion of social facts
Max Weber's notions of social action and social relations
Ferdinand Tönnies's concept of community
Karl Marx's concept of co-operative work
Big data

## OVERVIEW

This chapter introduces how one can think about social media. You will engage with the question: What is social about social media? One of the first reactions that many people have when hearing the term "social media" is to ask: "Aren't all media social?" This depends on how one conceives the social. In order to understand the meanings of this term, we need to go into sociological theory. This chapter presents some concepts of what it can mean to be social and discusses the implications of these concepts for understanding social media.

Mainly, sociological theory has asked the question of what it means to be social. Answering it therefore requires engagement with sociological theory. Specifically, I will introduce Durkheim's, Weber's, Marx's and Tönnies's concepts of sociality and apply them to providing an explanation of the social media concept.

Section 2.1 discusses the question of what new social media are and provides some basic features and criticisms of the terms "web 2.0" and "social media". In section 2.2, you can read different definitions of social media. I point out that we need social theory to understand what is social about social media. For this task, some sociological theory concepts are introduced that allow us to better understand the sociality of social media. I introduce ~~the~~ four concepts developed by social theorists. Émile Durkheim (1858–1917) was a French sociologist who developed the concept of social facts. Max Weber (1864–1920) was a German sociologist who worked out a theory of social action and social relations. Karl Marx (1818–1883) was a social theorist who established a critical theory of capitalism. Collaborative work is one of this theory's concepts. Ferdinand Tönnies (1855–1936) was a German sociologist who is best known for his theory of community. Section 2.3 discusses how the concepts of these four thinkers can be used in constructing a model of social media. It also examines how one can empirically study the continuities and changes of the World Wide Web. Section 2.4 introduces a model of social media communication. Section 2.5 discusses the notion of big data and why it has become important.

## 2.1 WEB 2.0 AND SOCIAL MEDIA

### WEB 2.0

The terms "social media" and "web 2.0" have in the past years become popular for describing types of World Wide Web (WWW) application, such as blogs, microblogs like Twitter, social networking sites, or video/image/file sharing platforms or wikis. As the word "social" features prominently in the term "social media", the question arises: what is social about social media?

The term "web 2.0" was coined in 2005 by Tim O'Reilly (2005a, 2005b), the founder of the publishing house O'Reilly Media, which focuses on the area of computer technology. O'Reilly (2005a) lists the following as the main characteristics of web 2.0: radical decentralization, radical trust, participation instead of publishing, users as contributors, rich user experience, the long tail, the web as platform, control of one's own data, remixing data, collective intelligence, attitudes, better software by more users, play, undetermined user behaviour. He provides the following more formal definition:

> Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications are those that make the most of the intrinsic advantages of that platform: delivering software as a continually-updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an "architecture of participation", and going beyond the page metaphor of Web 1.0 to deliver rich user experiences. (O'Reilly 2005b)

O'Reilly creates the impression that the WWW, featuring BitTorrent, blogs, Flickr, Google, tagging, Wikipedia and so on, was in 2005 radically new and different from the earlier web (1.0). O'Reilly (2005a) consequently spoke of web 2.0 as a "new platform" that features "new applications".

In 2000, a crisis of the Internet economy emerged. The inflow of financial capital had driven up the market values of many Internet companies, but profits could not hold up with the promises of high market values. The result was a financial bubble (the so-called dot.com bubble) that burst in 2000, resulting in many start-up Internet companies going bankrupt. They were mainly based on venture capital financial investments and the hope of delivering profits in the future, and this resulted in a gap between share values and accumulated profits. The talk about the novelty of "web 2.0" and social media fits well into the post-crisis situation, in which investors had to be convinced to invest into new Internet start-up companies, which was difficult after the 2000 crisis. The ideology that web 2.0 is something new and different and that it has new economic and democratic potentials helped to convince investors. Web 2.0 and social media were therefore born in the situation of capitalist crisis as ideologies aimed at overcoming the crisis and establishing new spheres and models of capital accumulation for the corporate Internet economy. The talk about novelty was aimed at attracting novel capital investments.

Although Tim O'Reilly surely thinks that "web 2.0" denotes actual changes, he says that the crucial fact about it is that users, as a collective intelligence, co-create the value of platforms like Google, Amazon, Wikipedia or Craigslist in a "community of connected users" (O'Reilly and Battelle 2009, 1). He admits that the term was mainly created for identifying the need of new economic strategies for Internet companies after the "dot-com" crisis, in which the bursting of financial bubbles caused the collapse of many Internet companies. So he states in a paper published five years after the invention of the term "web 2.0" that this nomenclature was "a statement about the second coming of the Web after the dotcom bust". He was speaking at a conference that was "designed to restore confidence in an industry that had lost its way after the dotcom bust" (ibid.).

## CRITIQUES OF WEB 2.0 AND SOCIAL MEDIA OPTIMISM

Critiques of web 2.0/social media optimism have, for example, stressed the following points:

- *Digital labour*: Online advertising is a mechanism by which corporations exploit Internet users' digital labour. Users form an Internet prosumer/produser commodity and are part of a surplus-value generating class that produces the commons of society that are exploited by capital (Fuchs 2008a, 2010c). Web 2.0 is based on the exploitation of free labour (Terranova 2004).
- *The branding of the self*: Most Internet users are part of a creative precarious underclass that needs economic models that assist them in making a living from their work (Lovink 2008). Blogging is mainly a self-centred, nihilistic, cynical activity (Lovink 2008). Alice Marwick (2013) argues that social media foster status-seeking behaviour and thereby "promote the infiltration of marketing and advertising techniques into relationships and social behavior" (93). Social media "is predicated on the cultural logic of celebrity, according to which the highest value is given to mediation, visibility, and

attention" (Marwick 2013, 14). The neoliberal logic of competition and individualism is expressed by the fact that on certain social media platforms, one accumulates likes, followers, friends or check-ins, and the more of it one has, the higher one's cultural online capital and social online capital. Social capital is according to Pierre Bourdieu (1986, 122) a capital of "a capital of social connections, honourability and respectability", whereas cultural capital has to do with reputation. Competitive social media foster the branding, quantification, marketization, commodification, capitalization of the self. Although we speak of "social" media, many contemporary "social" media platforms logic is quite individualistic. They are called Facebook, YouTube or MySpace and not WeBook, OurTube or OurSpace because they are all about the self-presentation of the individual (networked) self. There is, however, also the potential to redesign social media away from the commodification of data and the self towards a collective "we"-logic, in which individuals encounter each other as partners, friends based on a logic of the commons, community and co-operation. So although dominant social media tend to foster the logic of individualization, as Marwick and Lovink stress, there are certainly alternative potentials.

- *Corporate imperialism*: Corporate media chains dominate the Internet economy (Stanyer 2009). Web 2.0 is contradictory and therefore also serves dominative interests (Cammaerts 2008). Web 2.0 optimism is uncritical and an ideology that serves corporate interests (Fuchs 2008a; van Dijck and Nieborg 2009). Corporations appropriate blogs and web 2.0 in the form of corporate blogs, advertising blogs, spam blogs and fake blogs (Deuze 2008).
- *Marketing and sharing ideology*: Web 2.0 and social media is a marketing ideology (Scholz 2008) that aims at attracting investors by trying to convince them that the Internet is constantly renewing itself and thereby bringing about new business opportunities. Both concepts have been arising in the aftermath of Internet economy's crisis in 2000 and have aimed to restore investors' confidence (Hinton and Hjorth 2013, Chapter 2). Facebook and other corporate social media use the notion of sharing for mystifying the logic of profit, advertising and commerce that is at the heart of their operation (John 2013).
- *The ideology of activity and creativity*: Web 2.0 users are more passive users than active creators (van Dijck 2009).
- *Simplistic notion of participation*: Web 2.0 discourse advances a minimalist notion of participation (Carpentier and De Cleen 2008).
- *Depoliticization*: Web 2.0 discourse is technological fetishism that advances post-politics and depoliticization in communicative capitalism (Dean 2005, 2010).
- *Techno-determinism*: Social media optimism is based on the techno-deterministic ideologies of cyber-utopianism and Internet-centrism (Morozov 2011) that only postulate advantages for businesses and society without taking into account the realities of exploitation and the contradictions of capitalism (Freedman 2012; Fuchs 2011b, Chapter 7).
- *Engineered, instrumental sociality*: José van Dijck (2013, 11) argues that social media automate the social by engineering and manipulating social connections. It would make "sociality technical" (van Dijck 2013, 12). Douglas Rushkoff (2010, 158) says that as a result "we are optimizing humans for machinery". "These days the social is a feature. It is no longer a problem (as in the nineteenth and twentieth centuries when the Social Problem predominated) or a sector in society provided for deviant, sick, and elderly people. Until recently, employing an amoral definition of the social was unthinkable" (Lovink 2011, 6).

### HOW NEW ARE SOCIAL MEDIA?

Matthew Allen (2012) and Trebor Scholz (2008) argue that social media applications are not new and that their origins can be traced back to years earlier than 2005. Blogs were already around at the end of the 1990s, the wiki technology was suggested by Ward Cunningham in 1994 and first released in 1995, social networking sites already existed in 1995 (Classmates) and in 1997 (Sixdegrees), Google was founded in 1999. The discourse of ever newer versions would allow "products to claim to be new" (Allen 2012, 264), but at the same time also sustain "continuity and promise an easy transition from what came before" (ibid.). Versions would be ways of encouraging consumption. When talking about novelty, one has to be clear whether one talks about the novelty of technology, usage patterns or power relations.

Allen and Scholz argue that the technologies that constitute "social media"/"web 2.0" are not new. However, on the level of usage, these technologies were not popular in the 1990s and have become popular rather recently. On the level of the power relations of the Internet, it is just as unlikely that nothing changes at all as it is unlikely that there is radical change, because at a certain level of its organization capitalism requires change and novelty in order to stay the same (system of surplus value exploitation and capital accumulation) and continue to exist.

Tom Standage (2013) in his book *Writing on the Wall: Social Media – The First 2,000 Years* takes a long-term perspective and argues that at the time of the Romans, social communication took on the form of "letters and other documents which were copied, commented on, and shared with others in the form of papyrus rolls" (1–2). Social media would therefore be at least 2,000 years old.

> The Romans did with with papyrus rolls and messengers; today hundreds of millions of people do the same things rather more quickly and easily using Facebook, Twitter, blogs, and other Internet tools. The technologies involved are very different, but these two forms of social media, separated by two millennia, share many of the same underlying structures and dynamics: they are two-way, conversational environments in which information passes horizontally from one person to another along social networks, rather than being delivered vertically from an impersonal central source. (3)

## 2.2 THE NEED OF SOCIAL THEORY FOR UNDERSTANDING SOCIAL MEDIA

### DEFINITIONS OF WEB 2.0 AND SOCIAL MEDIA

Michael Mandiberg argues that the notion of "social media" has been associated with multiple concepts: "the corporate media favorite 'user-generated content', Henry Jenkin's media-industries-focused 'convergence culture', Jay Rosen's 'the people formerly known as the audience', the politically infused 'participatory media', Yochai Benkler's process-oriented 'peer-production', and Tim O'Reilly's computer-programming-oriented 'Web 2.0'" (Mandiberg 2012, 2).

Here are some example definitions of web 2.0 and social media that can be found in the research literature (in reverse chronological order, the list includes examples only and by no means claims to be complete):

- "I use the term social media to refer to the sites and services that emerged during the early 2000s, including social network sites, video sharing sites, blogging and microblogging platforms, and related tools that allow participants to create and share their own content" (boyd 2014, 6).
- Social media means "networked information services designed to support in-depth social interaction, community formation, collaborative opportunities and collaborative work" (Hunsinger and Senft 2014, 1).
- Social media is "an environment in which information is "passed from one person to another along social connections, to create a distributed discussion or community" (Standage 2013, 3). "Today, blogs are the new pamphlets. Microblogs and online social networks are the new coffee-houses. Media-sharing sites are the new commonplace books. They are all shared, social platforms that enable ideas to travel from one person to another, rippling through networks of people connected by social bonds, rather than having to squeeze through the privileged bottleneck of broadcast media" (Standage 2013, 250).
- "The very word 'social' associated with media implies that platforms are user centered and that they facilitate communal activities, just as the term 'participatory' emphasizes human collaboration. Indeed, social media can be seen as online facilitators or enhancers of human networks –webs of people that promote connectedness as a social value" (van Dijck 2013, 11). "As a result of the interconnection of platforms, a new infrastructure emerged: an ecosystem of connective media with a few large and many small players. The transformation from networked communication to 'platformed' sociality, and from a participatory culture to a culture of connectivity took place in a relatively short time span of ten years" (van Dijck 2013, 4).
- Social media represents "the technologies or applications that people use in developing and maintaining their social networking sites. This involves the posting of multimedia information (e.g., text, images, audio, video), location-based services (e.g., Foursquare), gaming (e.g. Farmville, Mafia Wars)" (Albarran 2013, 2).
- "Since at least 2004, the internet, and more specifically the web, has witnessed a notorious and controversial shift away from the model of the static web page towards a social web or Web 2.0 model where the possibilities of users to interact with the web have multiplied. It has become much easier for a layperson to publish and share texts, images and sounds. A new topology of distribution of information has emerged, based in 'real' social networks, but also enhanced by casual and algorithmic connections" (Terranova and Donovan 2013, 297).
- Social media "describes a specific set of internet-based, networked communication platorms. These us a business model of a database built by its own users. And they enable the convergence of public and personal communication. This definition includes Facebook and Twitter, Reddit and Tumblr, Pinteresta and Instagram, Blogger and YouTube, among others" (Meikle 2016, x). Social media tools feature "the elements of profile, contacts and interaction with those contacts", "blur the distinction between personal communication and the broadcast model of messages sent to nobody in

particular" (Meikle and Young 2012, 61). Social media "manifest a convergence between personal communication (to be shared one-to-one) and public media (to be shared with nobody in particular)" (Meikle and Young 2012, 68).

- "In the first decade or so of the Web's existence (from the 1990s to the early or mid-200s), websites tended to be like separate gardens. [...] Web 2.0 is like a collective allotment. Instead of in individuals tending their own gardens, they come together to work collaboratively in a shared space. [...] At the heart of Web 2.0 is the idea that online sites and services become more powerful the more they embrace this network of potential collaborators" (Gauntlett 2011, 4–5). It is characterized by the emergence of a "'making and doing' culture" (Gauntlett 2011, 11) and by "making and sharing our own media culture – I mean, via lo-fi YouTube videos, eccentric blogs, and homemade websites, rather than by having to take over the traditional media of television stations and printing presses" (Gauntlett 2011, 18). Making things online and offline would connect things together and involve "a social dimension and connect us with other people", the social and physical world (Gauntlett 2011, 3).
- "Social media indicate a shift from HTML-based linking practices of the open web to liking and recommendation, which happen inside closed systems. Web 2.0 has three distinguishing features: it is easy to use, it facilitates sociality, and it provides users with free publishing and production platforms that allow them to upload content in any form, be it pictures, videos, or text" (Lovink 2011, 5).
- "Social media is the latest buzzword in a long line of buzzwords. It is often used to describe the collection of software that enables individuals and communities to gather, communicate, share, and in some cases collaborate or play. In tech circles, social media has replaced the earlier fave 'social software'. Academics still tend to prefer terms like 'computer-mediated communication' or 'computer-supported co-operative work' to describe the practices that emerge from these tools and the old skool academics might even categorize these tools as 'groupwork' tools. Social media is driven by another buzzword: 'user-generated content' or content that is contributed by participants rather than editors" (boyd 2009).
- Social media and social software are tools that "increase our ability to share, to co-operate, with one another, and to take collective action, all outside the framework of traditional institutional institutions and organizations" (Shirky 2008, 20–21).

These approaches discussed above describe various forms of online sociality: collective action, communication, communities, connecting/networking, co-operation/collaboration, the creative making of user-generated content, playing, sharing. They show that defining social media requires an understanding of sociality: What does it mean to be and act in a social way? What is the social all about? There are different answers to these questions. The field concerned with these kinds of questions is called social theory. It is a subfield of sociology. To provide answers, we therefore have to enter the research field of social theory.

## MEDIA AND SOCIAL THEORY

Media are not technologies, but techno-social systems. They have a technological level of artefacts that enable and constrain a social level of human activities that create knowledge

that is produced, diffused and consumed with the help of the artefacts of the technological level. There is a recursive dynamic relation between the technological and the social level of the media. Media are based on what Anthony Giddens (1984) calls the duality of structure and agency (see Figure 2.1, Fuchs 2003b): "According to the notion of the duality of structure, the structural properties of social systems are both medium and outcome of the practices they recursively organise" (25) and they both enable and constrain actions (26). Media are techno-social systems, in which information and communication technologies enable and constrain human activities that create knowledge that is produced, distributed and consumed with the help of technologies in a dynamic and reflexive process that connects technological structures and human agency.

The Internet consists of both a technological infrastructure and (inter)acting humans. It is not a network of computer networks, but a network that interconnects social networks and

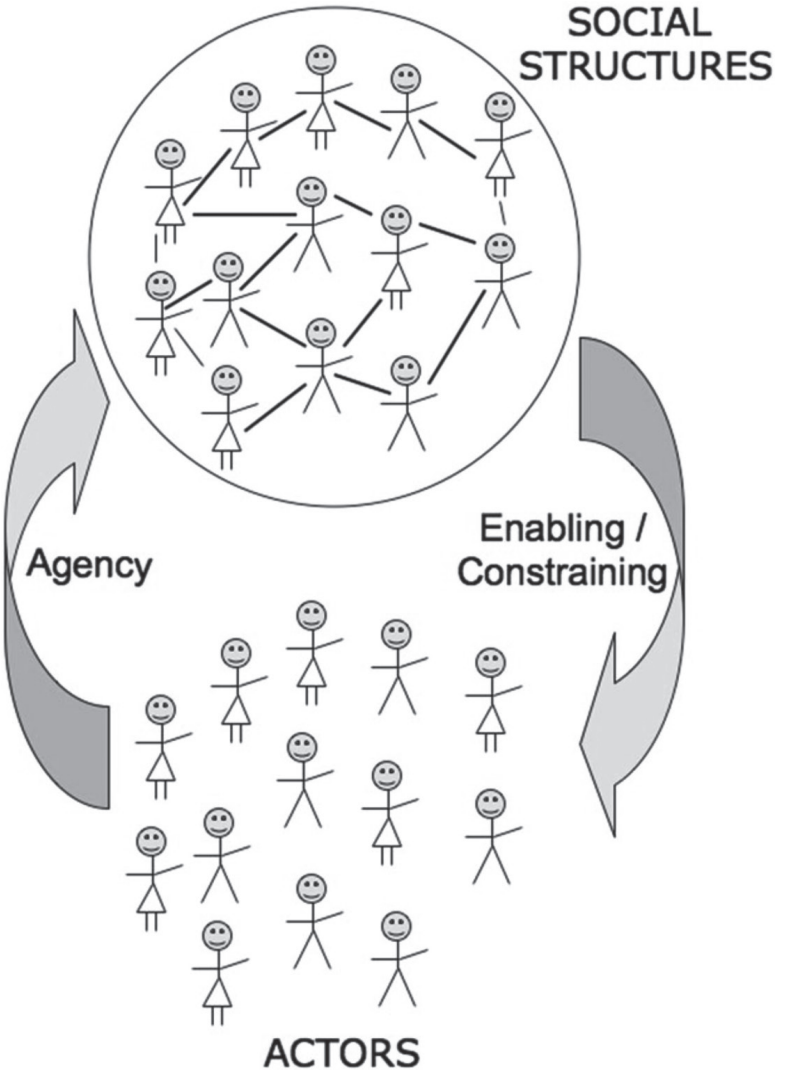


**FIGURE 2.1** The dialectic of structure and agency

technological networks of computer networks (see Figure 2.2). The technical network structure (a global computer network of computer networks based on the TCP/IP (Transmission Control Protocol/Internet Protocol) protocol, a model that is used for defining how data is formatted, transmitted and received on the Internet) is the medium for and outcome of human agency. It enables and constrains human activity and thinking and is the result of productive social communication and co-operation processes. The technological structure/part of the Internet enables and constrains human behaviour and is itself produced and permanently reproduced by the human communicative part of the Internet. The Internet consists of a technological system and a social subsystem that both have a networked character. Together these two parts form a techno-social system. The technological structure is a network that produces and reproduces human actions and social networks and is itself produced and reproduced by such practices.

If we want to answer the question what is social about social media and the Internet, then we are dealing with the level of human agency. We can distinguish different forms of sociality at this level. They correspond to the three most important classical positions in social theory, the ones defined by Émile Durkheim, Max Weber and Karl Marx (Elliott 2009, 6–7).

## ÉMILE DURKHEIM: THE SOCIAL AS SOCIAL FACTS

The first understanding of sociality is based on Émile Durkheim's notion of the *social* – social facts:

> A social fact is every way of acting, fixed or not, capable of exercising on the individual an external constraint; or again, every way of acting which is general throughout a given society, while at the same time existing in its own right independent of its individual manifestations. (Durkheim 1982, 59)

All media and all software are social in the sense that they are products of social processes. Humans in social relations produce them. They objectify knowledge that is produced in society, applied and used in social systems. Applying Durkheim's idea of social facts to computing means that all software applications and media are social because social structures are fixed and objectified in them. These structures are present even if a user sits in front

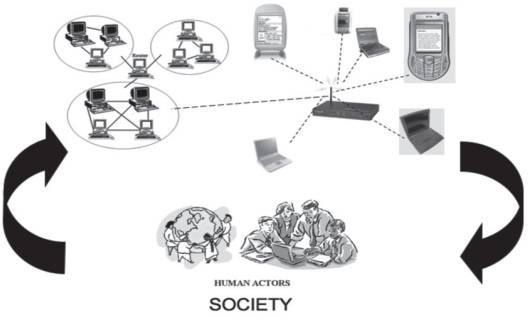


**FIGURE 2.2** The Internet as duality of technological computer networks and social networks of humans

of a screen alone and browses information on the World Wide Web because, according to Durkheim, they have an existence of their own, independent of individual manifestations. Web technologies therefore are social facts.

## MAX WEBER: THE SOCIAL AS SOCIAL RELATIONS

The second understanding of sociality is based on Max Weber. His central categories of sociology are *social action* and *social relations*: "Action is 'social' insofar as its subjective meaning takes account of the behavior of others and is thereby oriented in its course" (Weber 1978, 4). "The term 'social relationship' will be used to denote the behaviour of a plurality of actors insofar as, in its meaningful content, the action of each takes account of that of the others and is oriented in these terms" (Weber 1978, 26). These categories are relevant for the discussion because they allow a distinction between *individual* and *social activities*:

> Not every kind of action, even of overt action, is "social" in the sense of the present discussion. Overt action is not social if it is oriented solely to the behavior of inanimate objects. For example, religious behavior is not social if it is simply a matter of contemplation or of solitary prayer. [...] Not every type of contact of human beings has a social character; this is rather confined to cases where the actor's behavior is meaningfully oriented to that of others. (Weber 1978, 22–23)

Weber stresses that in order to constitute a social relation, behaviour needs to be a meaningful symbolic interaction between human actors.

## FERDINAND TÖNNIES: THE SOCIAL AS COMMUNITY

The notions of community and co-operation, as elaborated by Tönnies and Marx, are the foundation for a third understanding of the social as collaboration. Ferdinand Tönnies conceives co-operation in the form of "sociality as community". He argues that "the very existence of *Gemeinschaft* [community] rests in the consciousness of belonging together and the affirmation of the condition of mutual dependence" (Tönnies 1988, 69), whereas *Gesellschaft* (society) for him is a concept in which "reference is only to the objective fact of a unity based on common traits and activities and other external phenomena" (Tönnies 1988, 67). Communities would have to work within a harmonious consensus of wills, folkways, belief, mores, the family, the village, kinship, inherited status, agriculture, morality, essential will and togetherness. Communities are about feelings of togetherness and values.

## KARL MARX: THE SOCIAL AS CO-OPERATIVE WORK

Marx discusses community and collaborative aspects of society with the help of the notion of co-operative work. Marx and Engels argued that co-operation is the essence of society. In capitalism, it has become subsumed under capital so that it is alienated labour, and can only be fully developed in a free society. For Marx and Engels, co-operation is the essence of the social:

> By social we understand the co-operation of several individuals, no matter under what conditions, in what manner and to what end. It follows from this that a certain mode of production, or industrial stage, is always combined with a certain mode of co-operation, or social stage, and this mode of co-operation is itself a "productive force". (Marx and Engels 1846, 50)

Co-operation is a foundation of human existence:

> By the co-operation of hands, organs of speech, and brain, not only in each individual, but also in society, human beings became capable of executing more and more complicated operations, and of setting themselves, and achieving, higher and higher aims. (Engels 1886, 288)

But co-operation is also the foundation of capitalism: "A large number of workers working together, at the same time, in one place (or, if you like, in the same field of labour), in order to produce the same sort of commodity under the command of the same capitalist, constitutes the starting-point of capitalist production" (Marx 1867, 439).

Marx argues that capitalists exploit the collective labour of many workers by appropriating surplus value. Co-operation would therefore turn, under capitalist conditions, into alienated labour. This antagonism between the co-operative character of production and private appropriation that is advanced by the capitalist development of the productive forces is a factor that constitutes crises of capitalism and points towards and anticipates a co-operative society:

> The contradiction between the general social power into which capital has developed and the private power of the individual capitalists over these social conditions of production develops ever more blatantly, while this development also contains the solution to this situation, in that it simultaneously raises the conditions of production into general, communal, social conditions. (Marx 1894, 373)

A fully developed and true humanity is, for Marx, only possible if man "really brings out all his *species*-powers – something which in turn is only possible through the co-operative action of all of mankind" (Marx 1844, 177). For Marx, a co-operative society is the realization of the co-operative essence of humans and society. Hence he speaks based on the Hegelian concept of truth (i.e. the correspondence of essence and existence, the way things should be and the way they are) of the "reintegration or return of man to himself, the transcendence of human self-estrangement", "the real *appropriation* of the *human* essence by and for man", "the complete return of man to himself as a *social* (i.e., human) being" (Marx 1844, 135). Marx (1875) speaks of such transformed conditions as the co-operative society.

The basic idea underlying Marx's notion of co-operation is that many human beings work together in order to produce goods that satisfy human needs and that, hence, also the ownership of the means of production should be co-operative. It is interesting that Marx already had a vision of a globally networked information system. Of course he did not speak of the Internet in the mid-nineteenth century, but he anticipated the underlying idea: Marx stresses that the globalization of production and circulation necessitates institutions that allow capitalists to inform themselves on the complex conditions of competition:

> Since, "if you please," the autonomization of the world market (in which the activity of each individual is included), increases with the development of monetary relations (exchange value) and vice versa, since the general bond and all-round interdependence in production and consumption increase together with the independence and indifference of the consumers and producers to one another; since this contradiction leads to crises, etc., hence, together with the development of this alienation, and on the same basis, efforts are made to overcome it: institutions emerge whereby each individual can acquire information about the activity of all others and attempt to adjust his own accordingly, e.g. lists of current prices, rates of exchange, interconnections between those active in commerce through the mails, telegraphs etc. (the means of communication of course grow at the same time). (This means that, although the total supply and demand is independent of the actions of each individual, everyone attempts to inform himself about them, and this knowledge then reacts back in practice on the total supply and demand. Although on the given standpoint, alienation is not overcome by these means, nevertheless relations and connections are introduced thereby which include the possibility of suspending the old standpoint.) (The possibility of general statistics, etc.) (Marx 1857/1858, 160–161)

Although Marx here speaks of lists, letters and the telegraph, it is remarkable that he saw the possibility of a global information network in which "everyone attempts to inform himself" on others and "connections are introduced". Today the Internet is such a global system of information and communication, which represents a symbolic and communicative level of mechanisms of competition, but also poses new opportunities for "suspending the old standpoint".

Tönnies's and Marx's notions of the social have in common the idea that humans work together in order to produce new qualities of society (non-physical ones, i.e. shared feelings, in the case of Tönnies and material ones, economic goods, in the case of Marx).

## 2.3 EXPLAINING SOCIAL MEDIA WITH DURKHEIM, WEBER, MARX AND TÖNNIES

### A MODEL OF HUMAN SOCIALITY

The three notions of sociality (Durkheim's social facts, Weber's social actions/relations, Marx's and Tönnies's co-operation) can be integrated into a model of human social activity. It is based on the assumption that knowledge is a threefold dynamic process of cognition, communication and co-operation (Hofkirchner 2013; see also Fuchs and Hofkirchner 2005; Hofkirchner 2002). Cognition is the necessary prerequisite for communication and the precondition for the emergence of co-operation. Or in other words: in order to co-operate you need to communicate and in order to communicate you need to cognize. Cognition involves the knowledge processes of a single individual. They are social in the Durkheimian sense because the existence of humans in society and therefore social relations shape human knowledge. Humans can only exist by entering into social relations with other humans. They exchange symbols in these relations – they communicate. This level corresponds to Weber's notion of social relations. A human being externalizes parts of its knowledge in every social relation.

As a result, this knowledge influences others, who change part of their knowledge structures and, as a response, externalize parts of their own knowledge, which results in the differentiation of the first individual's knowledge. A certain number of communications is not just sporadic, but continuous over time and space. In such cases, there is the potential that communication results in co-operation, the shared production of new qualities, new social systems or new communities with feelings of belonging together. This is the level of co-operative labour and community. It is based on the theories of Marx and Tönnies.

Information (cognition), communication and co-operation are three nested and integrated modes of sociality (Hofkirchner 2013). Every medium can be social in one or more of these senses. All media are information technologies. They provide information to humans. This information enters into the human realm of knowledge as social facts that shape thinking. Information media are, for example, books, newspapers, journals, posters, leaflets, films, television, radio, CDs, DVDs. Some media are also media of communication – they enable the recursive exchange of information between humans in social relations. Examples are letters in love relations, the telegraph and the telephone. Brecht (1932/2000), Enzensberger (1970/1997) and Smythe (in his essay "After bicycles? What?"; Smythe 1994, 230–244) have discussed the possibility that broadcasting technologies are transformed from information into communication technologies.

Networked computer technologies are technologies that enable cognition, communication and co-operation. The classical notion of the medium was confined to the social activities of cognition and communication, whereas the classical notion of technology was confined to the area of labour and production with the help of machines (such as the conveyor belt). The rise of computer technology and computer networks (such as the Internet) has enabled the convergence of media and machines – the computer supports cognition, communication and co-operative labour (production); it is a classical medium and a classical machine at the same time. Furthermore, it has enabled the convergence of production, distribution (communication) and consumption of information – you use only one tool, the networked computer, for these three processes. In contrast to other media (like the press, broadcasting, the telegraph, the telephone), computer networks are not only media of information and communication, but also enable the co-operative production of information.

In discussions about the novelty, discontinuities and continuities of the contemporary WWW, one can find a lot of confusion about which notion of sociality one actually talks about. It is, furthermore, often unreflective if one talks about continuity and changes of the technological level or the level of social relations. The latter is also the level of power relations in society; that is, the level at which in heteronomous societies certain groups and individuals try to make use of resource advantages, violence and means of coercion (physical violence, psychological violence, ideology) in order to derive benefits at the expense of others. When talking about changes of media or the Internet, one should always specify which level of analysis (technology, power relations) and which dimension of sociality one is referring to. The question of whether the Internet and the WWW have changed in the past x number of years always depends on the level of analysis, the granularity of analysis and the employed understanding/dimension of sociality. Different assumptions about the novelty or oldness, the discontinuity and continuity of the media, the Internet and the WWW are based on different definitions of the social, different levels of analysis and different levels of granularity of the analysis. Most of these discussions are very superficial and lack an understanding of social theory and philosophy.

One hypothesis of this book is that in order to maintain the inequality of the power relations of capitalism and capital accumulation, capitalism needs to change its productive forces, which includes the change of its informational productive forces. Therefore the technological and informational structures of the Internet have to a certain degree changed in order to guarantee the continuity of commodity culture, exploitation, surplus value generation and capital accumulation. The changes of the media and the Internet are shaped by complex, dialectical and contradictory continuities and discontinuities.

## WEB 1.0, WEB 2.0, WEB 3.0

If the web (WWW) is defined as a techno-social system that comprises the social processes of cognition, communication and co-operation, then the whole web is social in the Durkheimian sense because it is a social fact. Parts of it are communicative in the Weberian sense, while it is the community-building and collaborative part of the web that is social only in the most concrete sense of Tönnies and Marx. The part of the web that deals with cognition is exclusively Durkheimian without being Weberian, let alone Tönniesian–Marxian. The part that is about communication is Weberian and Durkheimian. And only the third, co-operative, part has all three meanings. Based on this distinction we can say that web 1.0 is a computer-based networked system of human cognition, web 2.0 a computer-based networked system of human communication, web 3.0 a computer-based networked system of human co-operation (Fuchs 2008a; Fuchs et al. 2010). Table 2.1 gives an overview of the application of the different concepts of sociality to the WWW. The distinction between the three dimensions of sociality is not an evolutionary or historical one, but rather a logical one. The use of the discourse of versions expresses the dialectical-logical connection of the three modes of sociality:

- Communication is based on and requires cognition, but is more than and different from cognition.
- Co-operation is based on and requires communication, but is more than and different from communication.
- Communication is a Hegelian dialectical *Aufhebung* (sublation) of cognition, co-operation is a dialectical *Aufhebung* of communication. *Aufhebung* means a relation between entities, in which one entity is preserved in the other and the other entity has an additional quality that is different from the first one (for a detailed discussion see Fuchs 2011b, Chapters 2.4 and 3.3). This difference also eliminates the first entity within the second, the preservation of qualities is at the same time an elimination – the two entities are different.

One, two or all three forms of sociality can (at a certain point of analysis) to a certain degree shape the WWW or any other medium. The task of empirical studies that are based on theoretical conceptions of the social is to analyse the presence or absence and the degree of presence of the three types of sociality in a certain medium.

The three forms of sociality (cognition, communication, co-operation) are encapsulated into each other. Each layer forms the foundation for the next one, which has new qualities. Figure 2.3 visualizes the encapsulation of the three dimensions of sociality on the WWW.

It is unlikely that the web (understood as a techo-social system that is based on the interaction of technological computer networks and social networks of power) has not changed in

**TABLE 2.1** Different understandings of sociality on the web

| Approach | Sociological theory | Meaning of sociality on the WWW |
|---|---|---|
| 1 Structural Theories | *Émile Durkheim:* Social facts as fixed and objectified social structures that constantly condition social behaviour. | All computers, the Internet and all WWW platforms are social because they are structures that objectify human interests, understandings, goals and intentions, have certain functions in society and effect social behaviour. |
| 2 Social Action Theories | *Max Weber:* Social behaviour as reciprocal symbolic interaction. | Only WWW platforms that enable communication over spatio-temporal distances are social. |
| 3 Theories of Social Co-operation | *Ferdinand Tönnies:* Community as social systems that are based on feelings of togetherness, mutual dependence, and values. *Karl Marx:* The social as the co-operation of many humans that results in collective goods that should be owned co-operatively. | Web platforms that enable the social networking of people, bring people together and mediate feelings of virtual togetherness are social. Web platforms that enable the collaborative production of digital knowledge are social. |
| 4 Dialectic of Structure and Agency *Émile Durkheim:* Cognition as social due to conditioning external social facts. *Max Weber:* communicative action. *Ferdinand Tönnies, Karl Marx:* Community-building and collaborative production as forms of co-operation. | Web 1.0 as a system of human cognition. Web 2.0 as a system of human communication. Web 3.0 as a system of human co-operation. | The Web as a dynamic threefold system of human cognition, communication and co-operation. |

the years since 2000 because capital has reorganized itself as a result of the capitalist crisis in 2000 so that it can survive and find new spheres of accumulation. It is also unlikely that the web is something completely new because, as we have seen, the Internet is a complex techno-social system with different levels of organization and sociality that have different speeds and depths of change within capitalism.

## EMPIRICALLY STUDYING CHANGES OF THE WEB

If and how the web has changed needs to be studied empirically. Such empirical research should be based on theoretical models. I want to give an example for testing the continuity and discontinuity of the WWW. We want to find out to which degree cognition, communication and co-operation, the three modes of sociality, were featured in the dominant platforms that made up the technical structures of the WWW in the USA in 1998 and 2011. The statistics are based on the number of unique users in one month of analysis. According to the claims made by O'Reilly (2005a, 2005b), 2002 was a year in the era of 1998, and 2013 one in the era of web 2.0. By conducting a statistical analysis, we can analyse the continuities and discontinuities of the technical structures of the WWW. Table 2.2 shows the results.

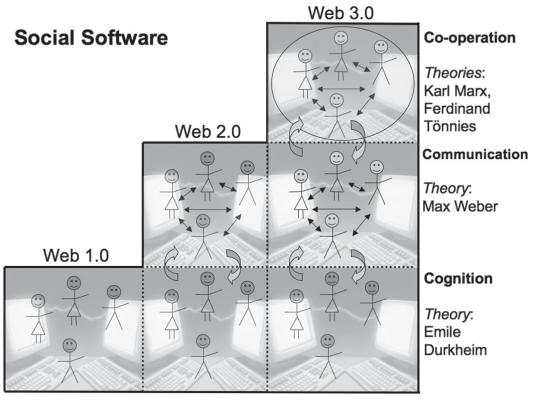


**FIGURE 2.3** Three dimensions of the web's sociality

The analysis shows that there are continuities and discontinuities in the development of the dominant platforms of WWW in the USA in the years 2002 and 2015. In 2002, there were 20 information functions, 13 communication functions and one co-operation function available on the top 20 websites. In 2015, there are 20 information functions, 17 communication functions and six co-operation functions on the top 20 websites. The number of websites that are oriented towards pure cognitive tasks (like search engines) has decreased from seven in 2002 to three in 2015. In 2015, the number of websites that also have communicative or co-operative features (six) is larger than the one of the pure information sites (three). This shows that the technological foundations for communicative and co-operative sociality have increased quantitatively. The quantitative increase of collaborative features from one to six has to do with the rise of Facebook, Google+, Wikipedia and LinkedIn: collaborative information production with the help of wikis and collaborative software (Wikipedia, Google Docs) and social networking sites oriented towards community-building (Facebook, Google+, LinkedIn). There are continuities and discontinuities in the development of the WWW in the period 2002–2015. The changes concern the rising importance of co-operative sociality. This change is significant, but not dramatic. One novelty is the rise of social networking sites (Facebook, LinkedIn, Google+, Douban, RenRen, VK, Ello, Diaspora, Vk, etc.). Another change is the emergence of blogs (Wordpress, Blogger/Blogpost, Tumblr, etc.), microblogs (Twitter, Weibo) and file-sharing websites (YouTube, Youku, Tudou), which have increased the possibilities of communication and information sharing in the top 20 US websites. Google has broadened its functions: it started as a pure search engine (in 1999), introduced communication features in 2007 (gMail) and its own social networking site platform (Google+) in June 2011.

The statistics indicate that the rise of co-operative sociality supported by social networking sites and wikis, and the differentiation of cognitive and communicative sociality (the emergence of file-sharing sites and blogs, including microblogs such as Twitter), have to a certain degree changed the technical structures of the WWW in order to enable new models of capital accumulation and the maintenance of the capitalist character of the WWW. Another significant change is the rise of the search engine Google, which has pioneered the web capital accumulation models by introducing targeted advertising that is personalized to the

**TABLE 2.2** Information functions of the top 20 websites

| 9 December 2002 (three-month page ranking based on page views and page reach) | | | 15 October 2015 (one-month page ranking based on average daily visitors and page views) | | |
|---|---|---|---|---|---|
| **Rank** | **Website** | **Primary information functions** | **Rank** | **Website** | **Primary information functions** |
| 1 | yahoo.com | cogn, comm | 1 | google.com | cogn, comm, coop |
| 2 | msn.com | cogn, comm | 2 | facebook.com | cogn, comm, coop |
| 3 | daum.net | cogn, comm | 3 | youtube.com | cogn, comm |
| 4 | naver.com | cogn, comm | 4 | baidu.com | cogn, comm |
| 5 | google.com[1] | cogn | 5 | yahoo.com | cogn, comm |
| 6 | yahoo.co.jp | cogn, comm | 6 | amazon.com | cogn |
| 7 | passport.net | cogn | 7 | wikipedia.org | cogn, comm, coop |
| 8 | ebay.com | cogn | 8 | qq.com | cogn, comm |
| 9 | microsoft.com | cogn | 9 | twitter.com | cogn, comm |
| 10 | bugsmusic.co.kr | cogn | 10 | google.co.in | cogn, comm, coop |
| 11 | sayclub.com | cogn, comm | 11 | taobao.com | cogn |
| 12 | sina.com.cn | cogn, comm | 12 | live.com | cogn, comm |
| 13 | netmarble.net | cogn, comm, coop | 13 | sina.com.cn | cogn, comm |
| 14 | amazon.com | cogn | 14 | linkedin.com | cogn, comm, coop |
| 15 | nate.com | cogn, comm | 15 | yahoo.co.jp | cogn, comm |
| 16 | go.com | cogn | 16 | weibo.com | cogn, comm |
| 17 | sohu.com | cogn, comm | 17 | ebay.com | cogn |
| 18 | 163.com | cogn, comm | 18 | google.co.jp | cogn, comm, coop |
| 19 | hotmail.com | cogn, comm | 19 | yandex.ru | cogn, comm |
| 20 | aol.com | cogn, comm | 20 | hao123.com | cogn, comm |
| | | cogn: 20 comm: 13 coop: 1 | | | cogn: 20 comm: 17 coop: 6 |

[1] Google's main communicative feature, the email service gMail, was launched in 2004. Its social networking site Google+ was launched in 2011.

interests of users and monitors their online behaviour and personal interests on the Internet. The change of the technical structures of the WWW has enabled the continuity of the logic of capital accumulation on the Internet after the dot-com bubble. Wikipedia, which is a non-profit and non-commercial platform funded by user donations, has entered the scene. It is the only successful WWW platform thus far that is not based on a capital accumulation model.

## 2.4 A MODEL OF SOCIAL MEDIA COMMUNICATION

The study of social media activity is due to the novelty of blogs and social networks like Facebook and Twitter a relatively young endeavour (see Fuchs et al. 2012; Trottier 2012). Based on the theoretical assumptions about the information process (the model of information as cognition, communication and co-operation introduced in section 2.3) and society

~~(the model of modern society in section 2.3)~~, we can describe social media communication based on social theory (see Fuchs 2015a, Chapter 8; Fuchs and Trottier 2015; Trottier and Fuchs 2015) based on social theory.

Some constitutive features of social media in modern society are the following.

## INTEGRATED SOCIALITY

Social media enable the convergence of the three modes of sociality (cognition, communication, cooperation) in an integrated sociality. This means for example on Facebook, an individual creates a multi-media content like a video on the cognitive level, publishes it so that others can comment (the communicative level) and allows others to manipulate and remix the content, so that new content with multiple authorship can emerge. One step does not necessarily result in the next, but the technology has the potential to enable the combination of all three activities in one space. Facebook, by default, encourages the transition from one stage of sociality to the next, within the same social space.

## INTEGRATED ROLES

Social media like Facebook are based on the creation of personal profiles that describe the various roles of a human being's life. In contemporary modern society, different social roles tend to converge in various social spaces. The boundaries between public life and private life as well as the work place and the home have become porous. As we have seen, Habermas identified systems (the economy, the state) and the lifeworld as central realms of modern society. The lifeworld can be further divided into culture and civil society. We act in different social roles in these spheres: for example as employees and consumers in the economic systems, as clients and citizens in the state system, as activists in the socio-political and in socio-economic spheres as lovers and consumers. We also act as family members in the private sphere, or as fan community members, parishioners, professional association members and so on in the socio-cultural sphere. A new form of liquid and porous sociality has emerged, in which we partly act in different social roles in the same social space. On social media such as Facebook, we act in various roles, but all of these roles become mapped onto single profiles that are observed by different people that are associated with our different social roles. This means that social media are social spaces, in which social roles tend to converge and become integrated in single profiles.

## INTEGRATED AND CONVERGING COMMUNICATION ON SOCIAL MEDIA

On social media, various social activities (cognition, communication, co-operation) in different social roles that belong to our behaviour in systems (economy, state) and the lifeworld (the private sphere, the socio-economic sphere, the socio-political sphere, the socio-cultural sphere) are mapped to single profiles. In this mapping process, data about a) social activites within b) social roles are generated. This means that a Facebook profile holds a1) personal data, a2) communicative data, a3) social network data/community data in relation to b1) private roles (friend, lover, relative, father, mother, child, etc.), b2) civic

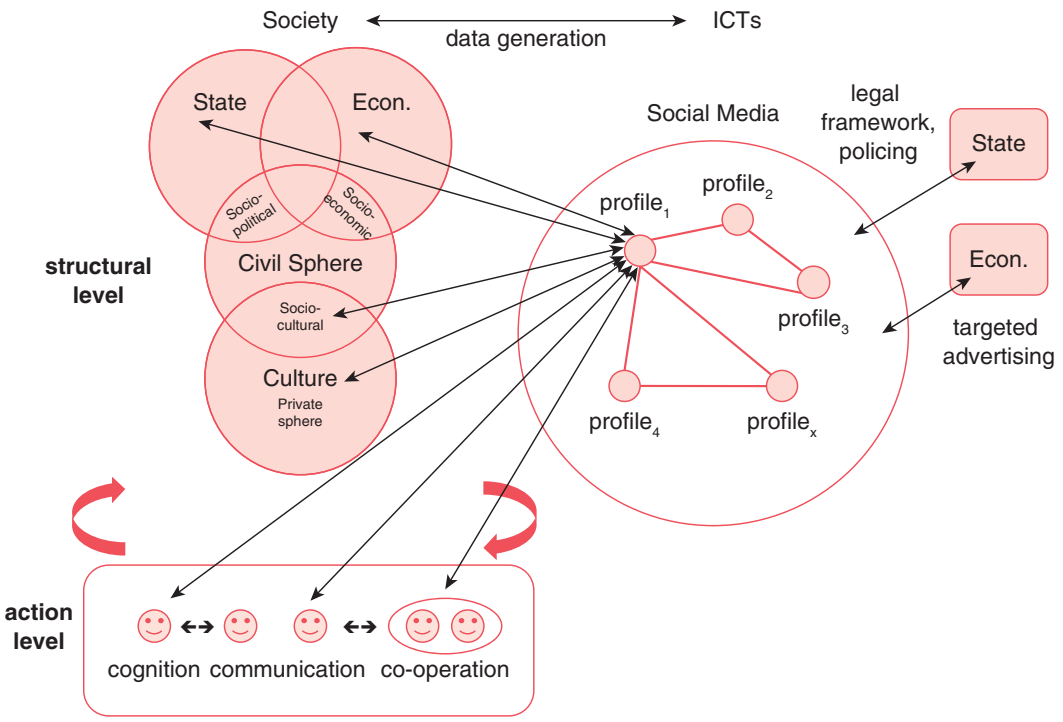


**FIGURE 2.4** The process of social media communication in modern society

roles (socio-cultural roles as fan community members, neighbourhood association members, etc.), b3) public roles (socio-economic and socio-political roles as activists and advocates) and b4) systemic roles (in politics: voter, citizen, client, politician, bureaucrat, etc.; in the economy: worker, manager, owner, purchaser/consumer, etc.). The different social roles and activities tend to converge, as for example in the situation where the workplace is also a playground, where friendships and intimate relations are formed and dissolved and where spare time activities are conducted. This means that social media surveillance is an integrated form of surveillance, in which one finds surveillance of different (partly converging) activities in different partly converging social roles with the help of profiles that hold a complex networked multitude of data about humans.

Figure 2.4 visualizes the communication process on one single social media system (such as Facebook) in modern society. The total social media communication process is a combination and network of a multitude of such processes. The integration of different forms of sociality and social roles on social media means that there are myriad possible social functions that any single platform can serve. Individual citizens may use it to communicate with other citizens in the context of any number of social roles, as well as for purposes that may transcend roles. They may also communicate with organizations and institutions for the same purposes. They may also simply monitor the communication in which any of these social actors are engaged. Institutions, including branches of the state, may do all of the above as well.

# 2.5 BIG DATA

## WHAT IS "BIG DATA"?

An even newer concept, trend, development, hype and ideology is "big data". According to Mayer-Schönberger and Cukier (2013), big data "refers to things one can do at a large scale that cannot be done at a smaller one, to extract new insights or create new forms of value" (6), "an important step in humankind's quest to quantify and understand the world", the "preponderance of things that could never be measured, stored, analyzed, and shared before is becoming datafied" (17–18). We would now be able to "manage far larger quantities of data than before, and the data […] need not be placed in tidy rows or classic database tables" (6). For Manyika et al., big data "refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze" (1). Big data refers to

> the major expansion in the contemporary era of the quantities of digital data that are generated as the products of users' transactions with and content generation via digital media technologies, as well as digital surveillance technologies such as CCTV cameras, RFID chips, traffic monitors and sensors monitoring the natural environment. (Lupton 2015, 94)

Big data "refers to the movement to analysze the increasingly vast amounts of information stored in multiple locations, but mainly online and primarily in the cloud" (Mosco 2014, 177). We can as a general definition say that big data are the vast amount of data generated by large-scale computing operations in order to analyse and predict the development of certain aspects of society or nature.

A related term is cloud computing. Whereas big data refers to large amounts of digital objects stored in computers, cloud computing refers to the way computing resources are used for storing big data. It is about devices for and the very processes of the storage, processing and distribution of data (Mosco 2014, 17), which often involves shared access to data among a certain group. It is also associated with the storage of vast amounts of data in data centres.

Uncritical accounts of big data, explain its importance purely technologically as the effect of Moore's law that says that computers' storage space and processing power doubles every 18 months. The rise of computing capacity would therefore result in an exponential growth of data storage. "Things really are speeding up. The amount of stores information grows four times faster than the world economy, while the processing power of computers grows nine times faster" (Mayer-Schönberger and Cukier 2013, 8)

## NEOLIBERAL BIG DATA IDEOLOGY: NON-ECONOMIC ASPECTS SUCH AS PRIVACY, DEMOCRACY, WAR/PEACE, OR (IN)EQUALITY ARE MISSING

The big data ideology presents the massification of available, collected, stored and analysed data as a huge opportunity for the economy and society and tends to disregard negative aspect. One example is an economic reductionism that frames big data in terms of GDP and productivity growth:

> Our research finds that data can create significant value for the world economy, enhancing the productivity and competitiveness of companies and the public sector and creating substantial economic surplus for consumers. […] we are on the cusp of a tremendous wave of innovation, productivity, and growth, as well as new modes of competition and value capture – all driven by big data as consumers, companies, and economic sectors exploit its potential. (Manyika et al. 2011, 1–2)

An associated ideology is that big data is in a positivist manner first presented as a major change of society and as radically new and transformative, which in a second results in claims that big data only benefits society:

"Big data marks the beginning of a major transformation" (really are speeding up. The amount of stores information grows four times faster than the world economy, while the processing power of computers grows nine times faster" (Mayer-Schönberger and Cukier 20137). The "world of big data is poised to shake up everything from businesses and the sciences to healthcare, government, education, economics, the humanities, and every other aspect of society" (11). "The benefits to society will be myriad, as big data becomes part of the solution to pressing global problems like addressing climate change, eradicating disease, and fostering good governance and economic development" (17). Some non-economic issues are addressed here, but overall such approaches argues for a technological fix to economic, social, political and cultural problems. They are techno-deterministic.

## BIG DATA'S POLITICAL ECONOMY

Critical political economy analyses the interconnection of economic and political dimensions of communications and digital media and discusses them in respect to history, society as totality, moral questions and ethical-political implications.

Big data stand in a broader societal – economic, political and ideological – context: 9/11 has advanced a culture of control, surveillance, fear-mongering, scapegoating and suspicion, competition and individualization, in which law-and-order politics and surveillance are seen as fixes to the complex societal problem of terrorism. This culture and ideology of surveillance and control has resulted in the emergence of a specific organizational form of the military-industrial-corporate complex, namely the surveillance-industrial Internet complex, in which secret services, communications corporations and private security companies collaborate in order to conduct large-scale surveillance of citizens' communications. Edward Snowden has revealed the existence of this complex that uses technologies and programmes such as Prism and XKeyScore.

Neoliberalism is on the one hand a market-fundamentalist ideology, but on the other hand also a form of governance that regulates the economy by strengthening the power of capital and weakening the power of labour. It advances the commodification and privatization of almost everything, the weakening of the idea of public services and the common good. The extension and intensification of advertising and consumer culture into the realm of online data is an expression of large-scale capitalist privatization and commodification under neoliberal condition. Facebook and Google collect and store vast amounts of data. They capture and hold all information that can get about their users, because they are interested

in commodifying it so that monetary profits can be derived. Facebook and Google are not communications companies. They do not sell access to communications, they sell big data for advertising purposes. They are the world's largest advertising agencies that operate as big data collection and commodification machines.

The collection, storage, control and analysis of "big data" stands in the context of the surveillance-industrial complex and neoliberalism, that is the economic and political control and targeting of individuals. They are targeted as consumers and as potential terrorists and criminals. Mark Andrejevic (2013) argues that big data stands in the context of big data surveillance of citizens, consumers and workers. Big data is the "paradox of 'total documentation'", in which the population as a whole is the target that is subjected to "population-level data capture" (35). Big data seen from a political-economic perspective of analysis means "data collection without limits" (36). For Vincent Mosco (2014, 10), big data and cloud computing are an expression of the combination of "surveillance capitalism" and the "surveillance state" in what he terms the military information complex (9).

## BIG DATA'S DANGERS, PROBLEMS AND IMPLICATIONS IN A CAPITALIST WORLD

"While the technological sphere of social media is new, so is the global phenomenon of Big Data worship, the ethical question about 'accessing', privatizing, and commodifying the commons has been a time-honored concern that goes all the way back to the beginning of the capitalist world-system" (Qiu 2015, 1091). There are manifold dangers and implications that big data poses in a capitalist world:

### *CONSUMER CULTURE*

The world is turned into a huge shopping mall. Humans are confronted with ads almost everywhere, capitalist logic colonizes the social, public and private world.

### *INSTRUMENTAL REASON*

- Algorithms' instrumental reason tries to calculate, plan and control human needs. David Chandler (2015) argues in this context that big data promises a posthuman world, in which not humans, but "'data' do the work" (848). The consequence would be an instrumental and administrative understanding of politics that "reduces governance to an ongoing and technical process of adaptation, accepting the world as it is" (835). It would advance a model of the governance of the self (838). We can add that individuals and communities' self-help via big data suggests the neoliberal outsourcing of responsibility from the state to individuals and communities and is therefore a discourse that neoliberal governments, parties and politics uncritically embrace. Ideological parallels are the neoliberal philosophy that you should "do what you love" and the concept of a big society, in which individuals form co-operatives, self-help groups, grassroots initiatives and other voluntary civil society projects that replace the welfare state. The problem is that such outsourcing of responsibility can create and enforce the attitude and impression that individuals and communities are responsible for social problems and their solutions, which distracts attention from actually

existing power structures. There is no doubt that a state that enhances and supports participation and grassroots initiatives is a much-needed development. Under neoliberal governmentality, the tendency is however that such initiatives are seen not as complements to, but as substitutes for the welfare state.

- In big data analytics, the "human comes into the picture realtively late in the process (if at all)" (Chandler 2015, 837). Algorithms play a central role. Big data analysis and research tends to be inductive, atheoretical, it works "'down' to the contextualisation of the idnvidual case, thereby promising personalised or individualised health care, political campaigning or product purchasing information. Big Data 'drills' or 'mines' down from the mass of data to the individual case" (846).

In big data analytics, instrumental reason takes on such a form that algorithms become "actors" that make choices and define needs on behalf of humans and make assumptions about human thought and behaviour based on algorithmic logic. The problem is that algorithms and computers unlike humans do not have affects, ethics and morals and only act based on the purely instrumental linear logic "IF condition C THEN take action A". Given that humans are complex societal beings, such linear instrumental reasoning is error-prone and creates false positives. In economic and political life, algorithmic logic can have severe consequences such as humans being considered as criminals or terrorists although they are innocent or being discriminated by banks, corporations or public services. Algorithms tend to erect a new God's eye view that automates human decision-making and action and thereby creates totalitarian potentials. Given the impacts of big data, research urgently faces "the task of revitalising a critical approach" (Chandler 2015, 851).

### INEQUALITY

The increased commodification coming along with big data means social inequality. There are new forms of discrimination that involve rational discrimination and cumulative disadvantage resulting from data recorded in databases that algorithms infer from predictions and that are error-prone (Gandy 2009). The Internet becomes a class-realm of exploitation. There is a "big data divide" (Andrejevic 2014) that concerns the ownership and control of data and poses advantages for the powerful and disadvantages for the less powerful.

### SURVEILLANCE SOCIETY'S FASCIST POTENTIALS

Categorical suspicion turns the presumption of innocence into a fascist presumption of guilt so that one is "innocent until proven guilty" and a "terrorist until proven innocent". Terrorists are not so silly to communicate their plans online, so the whole logic of big data surveillance is mistaken because there is no technological fix to political and socio-economic problems. Law and order politics fosters fascist potentials in society. Big data surveillance has intensified in times of capitalist crisis. Times of crisis are times of ideological scapegoating in order to distract attention from causes of social problems. Contemporary scapegoats include Romanian and Bulgarian workers, the European Union, benefits recipients, unemployed, poor, black youth, international students, immigrants, Muslims and Jews. Such ideologies deflect attention from social problems, inequality, precarious labour, unemployment, that is from the problems of capitalism. Crises are "ideologically constructed by the dominant

ideologies to win consent" (Hall et al. 1978, 220–221). Surveillance society is associated with moral panics that are "the key ideological forms in which a historical crisis is 'experienced and fought out'" (221).

### ENVIRONMENTAL PROBLEMS

Big data results in an exacerbation of environmental problems (Mosco 2014, 127–137; Mosco 2016, 520) because of the consumption of the large amounts of energy ~~consumption~~ needed for keeping data centres and cloud storage going and the increase of digital media technology use with short life-time that is as e-waste dumped into developing countries. In 2012, data centres used electricity that equals the output of 30 nuclear power plants.[1] Data centres tend to use diesel generators as back-up power supply systems (Mosco 2014, 133; Mosco 2016, 520). They produce pollutants that are released into the air and the soil.

### INCREASE OF UNEMPLOYMENT AND PRECARIOUS LABOUR

Big data and cloud computing can threaten jobs by outsourcing data storage and software provision and maintenance from companies' in-house IT departments to IT services (Mosco 2014, 155–174; Mosco 2016, 522–524). It can also result in the dismissal of knowledge workers if companies assume that big data analytics can provide better knowledge than these employees' expertise and skills. When corporations trust algorithms more than humans, this can have major consequences for employees. Because big data's digital positivism is prone to produce "big errors" (Mosco 2014, 199), substituting knowledge workers by algorithms also increases the risk of increasing economic vulnerability. Given the predominantly unregulated nature of digital labour, crowdsourcing labour to the cloud via platforms such as Amazon Mechanical Turk tends to create precarious, insecure labour that puts pressure on other jobs.

## BIG DATA AND ACADEMIA: SOCIAL MEDIA RESEARCH AS BIG DATA ANALYTICS

The rise of big data and social media has also transformed academia. In the social sciences, it has resulted in what Deborah Lupton (2015) terms digital sociology. Digital sociology involves: a) professional digital practice, in which social scientists use "digital tools as part of sociological practice – to build networks, construct an online profile, publicise and share research and instruct students" (15); b) analyses of digital technology uses; c) digital data analysis. In the context of the latter it has also become fashionable to speak of digital methods (Rogers 2013). The fourth aspect of digital sociology is d) critical digital sociology, by which Lupton (2015, 16) understands the "reflexive analysis of digital technologies informed by social and cultural theory".

There are many forms of social and cultural theory and in a way all forms of social analysis are a reflexion on and of society. For me, critical digital sociology is a particular reflexion of and on digital technologies' role in society, namely one that is informed by critical and Marxist theory that tries to understand capitalism and domination as well as their possible alternatives. There is indeed a contradiction between critical sociology as digital sociology's fourth realm and big data analytics that is part of Lupton's third realm of digital sociology.

An important trend in Internet research is big data analytics that has a focus on collecting large amounts of data from social media platforms and analysing it in a predominantly quantitative manner. The new media research guru Lev Manovich has argued that Internet Studies should therefore be turned into the large-scale computational analysis of online data, an approach that he terms Cultural Analytics (Manovich 2009) and Software Studies.[2] The obsession with quantification, computationalism and big data has also manifested itself as a preoccupation with attempts to develop new digital methods both in the humanities and social sciences: "Digital Humanities" often understands itself as humanities computing (Terras et al. 2013). The Collaborative Social Media Observatory (COSMOS) understands "social media research" explicitly as big data analytics, namely the analysis of "aggregate information in 'big social data' repositories, such as collective sentiment scores for subgroups of twitter users".[3]

## BIG DATA ANALYTICS' PROBLEMS

The trouble with many of these approaches is that they often do not connect statistical and computational research results to a broader analysis of human meanings, interpretations, experiences, attitudes, moral values, ethical dilemmas, uses, contradictions and macro-sociological implications of social media. There is a danger that a de-emphasis of philosophy, theory, critique and qualitative analysis advances administrative research (Lazarsfeld 1941/2004) that is predominantly concerned with how to make technologies and administration more efficient and effective. Paraphrasing Jürgen Habermas (1971), we can say that the there is a danger that digital positivism advances an "absolutism of pure [digital, quantitative] methodology" (5), forgets about academia's educational role, falls short of fully understanding "the meaning of knowledge" (69) in the information society at large and is an "immunization of the [Internet] sciences against philosophy" (67).

Vincent Mosco (2016, 2014) describes the belief in big data analytics' radically transformative power as digital positivism and cloud sublime. Big data is "a myth, a sublime story about conjuring wisdom not from the flawed intelligence of humans, with all of our well-known limitations, but from the pure data stored in the cloud" (Mosco 2014, 193). The "hot new profession of data scientist knows only quantitative approaches" (Mosco 2014, 197).

> This is inherently flawed because subjective states such as happiness, depression, or satisfaction mean different things to different people […] It is uncertain which is worse: that big data treats problems through oversimplification or that it ignores those that require a careful treatment of subjectivity, including lengthy observation, depth interviews, and an appreciation for the social production of meaning. (Mosco 2014, 198)

"It also devalues research grounded in historical, theoretical and disciplinary understandings of a field" (Mosco 2016, 524) and "tends to neglect context and history" (Mosco 2014, 201). Digital positivism can have serious negative impacts on humans and society because big data "can contain and mask big errors with big consequences" (Mosco 2014, 205).

Pure quantitative analyses of big data collected from social media are often relatively meaningless. They show what dominant topics and actors there are and often draw nice and

colourful pictures such as network graphs, but lack an understanding of why users act in specific way, how ideologies are expressed and challenged, what meanings they give to data, what ethical implications developments in the world of data have for society and humans, what alternatives to associated problems exist and so on. I am not arguing against social media and online-data based research methods, but only caution that social media and big data do not outdate established social research methods such as interviews, surveys, focus groups, content analysis and critical discourse analysis. All of these methods are needed for understanding the role of digital media in the information society. It, however, also makes sense to combine these methods with the collection of online data and critical, interpretative, creative, artistic, and theory-led online research methods and approaches. As well as conducting qualitative social research with social media users in order to learn about their experiences, interpretations and perspectives, it makes sense to also engage in collecting and analysing samples of data from social media platforms with the help of tools and services such as DiscoverText, HootSuite, DiscoverText, NodeXl, Gephi, NCapture/NVivo and Twitter Archiving Google Spreadsheet (TAGS). Instead of large-scale quantitative analysis of these data, critical digital sociology is well advised to utilize smaller samples and to analyse them with the help of qualitative analysis methods (critical visual analysis, ideology critique, critical discourse analysis, qualitative text/content analysis, etc.) and to critically interpret them with the help of social philosophy. We need a paradigm shift from big data analytics to critical social media research methods. Social media can also be used for engaging users in creating texts, images and videos as part of the research process. Thereby new potentials for creative, engaging and participatory research have emerged.

Social media content is a form of text that can be analysed in various ways. The usual way is to analyse big data corpuses in a predominantly quantitative way. At the same time, critical discourse analysis and ideology critique as research method has only been applied in a limited manner to social media data. Majid KhosraviNik (2013, 292) argues that "critical discourse analysis appears to have shied away from new media research in the bulk of its research". Critical discourse analysis has not just been weak on studying social media data, but is also a rather dogmatic and orthodox approach dominated by certain key figures not allowing much methodological flexibility in what is considered as being discourse analysis and what they want to exclude from it. Discourse is in general a rather strange, postmodern concept distant from the Marxist category of ideology that is much better suited for a critical theory of society. It is therefore better to speak of ideology critique instead of critical discourse analysis. Social media such as Twitter are still relatively new, which is one of the reasons why research about ideologies on social media has remained thus far limited. The mainstream in social media research is quantitative big data analysis, an approach that is very different from ideology critique that wants to understand the structure, context and implications of ideologies. The dominant paradigm of social media positivism has also posed limits for critical research. Developing critical social media research methods is an interesting aspect of critical digital and social media theory.

## CRITICAL SOCIAL MEDIA RESEARCH AND RESEARCH ETHICS

Some scholars studying Internet ethics have argued that a lot of users do not read the terms of service. Some of them may therefore not be aware of the potential data use and may

assume that their postings disappear in the mass of social media data, find it offensive if their public social media content is quoted in an academic work without informed consent, that the removal of identifiers is no guarantee of anonymity because of the possibility to search in repositories and meta-data and that large data archives can contain postings of private messages (Zimmer 2010a, 2010b; Zimmer and Proferes 2014). In this context, also differences between platform contexts have to be taken into account. Much of what happens on Facebook has for example a much more private feel than communication on Twitter.

## SOCIAL MEDIA RESEARCH ETHICS: THE DILEMMA OF PRIVACY PROTECTION VS. CENSORSHIP OF CRITICAL RESEARCH

This debate shows that Internet research faces the problem that from an ethical perspective it should not harm users by its analyses, but Internet research ethics taken to an extreme can make the development of new research methods impossible and harm academic knowledge production and in the case of critical studies also the possibilities for the critique of society. One should probably draw a distinction between the privacy implications of companies, the police and secret services conducting social media data analysis for commercial or national security interests and non-profit, non-commercial academic research. Commercial data analysis instrumentalizes and commodifies data. The police and secret services' analyses are often based on the problematic assumption that crime and terrorism can be predicted from online data, which can easily result in false positives. Privacy's context matters in social media analysis (Nissenbaum 2010). For social media research, we can, as the discussion shows, not assume that Twitter data analysis can never cause harm and that therefore anything goes. At the same time, privacy fundamentalism risks to discard social media analysis. A realistic approach is needed.

When large data archives with tens or hundreds of thousand items are published as open data, then the problem arises that sensitive data may be included and linked to personal identifiers. A good practice is to read the data in these archives item by item and to anonymize the IDs and content of those that contain sensitive data. In citing social media data in publications, some scholars and institutions, such as the Collaborative Online Social Media Observatory,[4] have taken the approach to only quote data from public institutions and to not quote individual users, except if they provide informed consent. Often such approaches mean that content data is displayed in the form of word clouds or only based on aggregate statistical information, which poses problems for critical analyses that analyse language use online in the context of society. The Centre for the Analysis of Social Media at Demos regularly conducts studies of online politics and takes a somewhat different approach. It argues that it is good to present data in aggregated form and that it needs to be carefully considered if Twitter quotations can cause "harm or distress to the originator" (Bartlett et al. 2014, 37). If "invasive personal information" (ibid.) is revealed in tweets, then it does not use these postings. In some cases, it also "cloaks" the text so that originators cannot be identified (ibid.). In general, it argues that Twitter data "is in the public domain and can therefore be treated as carrying implicit informed consent" (Bartlett and Miller 2013, 60).

It is ~~for example~~ not an option for an ideology critique of Twitter data to only present results in aggregated form or as word clouds because this does not allow to understand in detail how ideology works and is challenged. To obtain informed consent for example

for publishing racist, nationalist, fascist, fundamentalist, Nazist or right-wing extremist content may often result in rejection of informed consent and can endanger researchers. It is therefore easier for ideology critique to argue that Twitter data is public data. The danger of overdoing Internet research ethics is that it results in a de-facto censorship and ethical prohibition of the critical investigation of ideologies. One can argue that Twitter's privacy policy already is ~~already~~ a form of informed consent. Privacy scholars do, however, tend to see such policies as insufficient because it is not self-evident that everyone reads them in detail. The point of ideology critique is not to study ideologies in a personalized manner, but as structures in society. The actual user name of someone expressing or challenging an ideology is therefore not relevant, except if these are people working for public institutions, such as politicians.

In the case of everyday users, Internet researchers should not mention user names, but rather employ pseudonyms so that they make no direct identification. Even if data is anonymized, user profiles can often be identified via searches (Zimmer 2010). It is infeasible to conduct no critical analyses at all of online data. Any such considerations have the problematic potential to forestall critique. To reformulate the content of postings results in inauthenticity and can be interpreted as fabricating data. Absolute privacy would either require not doing online critical research or fabricating data. The most feasible solution for this dilemma is in my view that everyday users' profile names are not mentioned, which means that one does not personally identify them in the paper or report one writes.

## FOR CRITICAL INTERNET RESEARCH ETHICS REALISM

The British Psychological Society argues that online observation should only take place when and where users "reasonably expect to be observed by strangers" (BPS 2009, 13). It is often feasible to think about whether users in particular social media contexts expect to be observed by strangers or not. It is for example reasonable to assume that users who use specific hashtags (for example political hashtags) and direct their messages at the public for discussion therefore also reasonably expect to be observed by strangers such as journalists and researchers. Not revealing the profile names of everyday users, but instead using pseudonyms, seems in this context to therefore be a sufficient measure. The British Sociological Association argues in its ethical guidelines that informed consent and the blurring boundaries between the private and the public pose challenges in Internet research and that researchers should inform themselves about "ongoing debates on the ethics of Internet research" (BSA 2002, §41). Reflecting on Internet research ethics highly matters whenever we analyse online data.

Internet research ethics should not be taken to an extreme on social media in general and Twitter in particular. It must see that there is a big interest among academics to conduct qualitative analyses of social media data, that simply ascertaining privacy violations does not help, is not a way forward and unnecessarily pits Internet researchers against Internet ethicists. The point is that a constructive and realist dialogue is needed about such questions. It is feasible to assume that most political online communication on Twitter has the attention to attract a large public because politics is a social, collective and public phenomenon. Just like the private is political, most politics is public and intended for public debate, commenting and analysis.

## 2.6 CONCLUSION

Analysing continuities and discontinuities of the web requires social theory foundations. The WWW is not social in a simple sense, but to certain degrees on certain levels of analysis that are grounded in sociological conceptions of sociality. If one compares WWW use in the late 1990s to the end of the first decade of the second millennium, one finds the use patterns of the WWW are shaped by continuities and discontinuities. Information is continuously present, communication has been transformed, web technologies of co-operation have become more frequently used and important, but are certainly not dominant. The web is neither purely old nor purely new; it is a complex techno-social system embedded into power structures of capitalism that has to change to a certain extent at certain levels in order to enable the continuity of Internet-based capital accumulation.

This chapter dealt with the question: What is social media? Its main results are as follows:

- Dealing with the question "What is social media?" requires an understanding of what the social is all about. It is, in this respect, helpful to look at social theory for engaging with concepts of sociality in society. Relevant concepts of sociality include social facts (Émile Durkheim), social relations/social action (Max Weber), co-operative labour (Karl Marx) and community (Ferdinand Tönnies).
- Claims about the novelty and opportunities of "web 2.0" and "social media" like blogs, social networking sites, wikis, microblogs or content-sharing sites originated in the context of the dot-com crisis of the Internet economy and the resulting search for new business models and narratives that convince investors and users to support new platforms. The ideology of novelty intends to attract investors and users.
- Most social media technologies originated before 2005, when Tim O'Reilly established the concept of web 2.0. Wikis, blogs, social networking sites, microblogs and content-sharing sites have, however, become really popular since the middle of the first decade of the second millennium. It is both unlikely that in the years 2000–2010 the WWW has not changed at all and unlikely that it has radically changed. The capitalist Internet economy needs to change and innovate in order to guarantee the continuity of capital accumulation.
- The two concepts of participation and power have been used for characterizing social media (participatory culture, power and counter-power of mass self-communication). Class is another concept that is particularly suited. Great care should be taken to avoid techno-deterministic thinking, techno-centrism, techno-optimism, techno-pessimism and naturalization of domination in conceptualizing qualities of social media. Engaging with social theory, the history of concepts and the philosophical groundings of the Internet can provide help for developing concepts that describe structure, agency and dynamics of social media.
- Media are techno-social systems in which technological structures interact with social relations and human activities in complex ways. Power structures shape the media and the social relations of the media. When analysing social media, one should be clear about and should explicate the level of analysis.

## RECOMMENDED READINGS AND EXERCISES

Making sense of social media requires a theoretical understanding of what it means to be social. Sociological theory offers different concepts of the social. The following suggested readings introduce you to various concepts of the social by thinkers such as Émile Durkheim, Max Weber, Ferdinand Tönnies and Karl Marx. Other readings focus on digital sociology and big data/cloud computing.

Durkheim, Émile. 1895. The rules of sociological method. In *Classical sociological theory*, ed. Craig Calhoun, Joseph Gerteis, James Moody, Steven Pfaff and Indermohan Virk, 139–157. Malden, MA: Blackwell.

In "The rules of sociological method", Émile Durkheim introduces some basic foundations of a functionalist social theory, such as the notion of social facts. Discuss in groups and compare your results:

- What is a social fact?
- Make a list of economic, political and cultural examples of social facts that can be found in contemporary society.
- Each group can choose one web platform (such as Google, Yahoo, Facebook, Twitter, Weibo, Wikipedia, etc.). Think in your group about how this platform works and what kind of activities it supports. Make a list of social facts that can be found on the platform.

Weber, Max. 1914. Basic sociological terms. In *Classical sociological theory*, ed. Craig Calhoun, Joseph Gerteis, James Moody, Steven Pfaff and Indermohan Virk, 139–157. Malden, MA: Blackwell.

In "Basic sociological terms", Max Weber introduces foundational categories of a sociological action theory, such as action, social action and social relations. Discuss in groups and compare your results:

- How does Max Weber define social action?
- Make a list of examples of online activities that correspond to Weber's theory of the social and non-social. Compare how Durkheim would characterize the sociality of these platforms.
- Try to find examples of the four types of social action that Weber identifies.
- Try to find examples of four types of online social action according to Weber.

Tönnies, Ferdinand. 2001. *Community and civil society*, 17–51. Cambridge: Cambridge University Press.

Rheingold, Howard. 2000. *The virtual community: Homesteading on the electronic frontier*. Cambridge, MA: MIT Press. Chapter 11: Rethinking virtual communities.

Ferdinand Tönnies first published *Community and Civil Society* in 1887. In this work, he draws a distinction between *Gemeinschaft* (community) and *Gesellschaft* (society). It is interesting to read this text in combination with Howard Rheingold's *The Virtual Community*, where he discusses the logic of community in the age of the Internet and how it is limited by the logic of commodities that Tönnies considered specific for what he termed society. Discuss in groups and compare your results:

- Identify basic characteristics of a community according to Ferdinand Tönnies. Construct a list of features of a community.
- Try to identify different groups that you are in contact with on Facebook or another social networking site. Which of these groups are communities according to Tönnies, which are not, and why? Try to test the applicability of all community features that you have identified.
- What are, according to Howard Rheingold, the basic features of a virtual community? In which respects is Facebook a virtual community, and in which respects not? What does Howard Rheingold mean by "commodification of community"? Having read his chapter, how do you think he assesses Facebook?
- Additional exercise: Organize a conversation with Howard Rheingold or another well-known Internet scholar about what s/he sees as the positive and negative features of social media.

Marx, Karl. 1867. *Capital. Volume I*. London: Penguin. Chapter 13: Co-operation.

*Capital. Volume I* is one of the most influential books in economic thought. It contains a chapter that discusses the phenomenon of collaborative work and its role in the modern economy. Discuss in groups and compare your results:

- Try to give a definition of what co-operation and collaborative work are (this requires that you also define the concept of "work").
- How does Marx see the role of co-operation in capitalism?
- How does co-operation work on Wikipedia? Try to identify commonalities and differences between the co-operation brought about by capitalism that Marx describes and co-operation on Wikipedia. What are the differences and commonalities?

Lupton, Deborah. 2015. Introducing digital sociology. In *Public sociology: An introduction to Australian society*, ed. John Germov and Marilyn Poole. Crows Nest: Allen & Unwin. Chapter 22.

Read this text and then ask yourself and discuss in groups:

- What kind of digital practices do academics such as students, teachers and senior researchers engage in? How do digital media shape your academic lives?

*(Continued)*

*(Continued)*

- How do you analyse digital technology use in society? What kind of approaches, models, theories and methods do you use?
- What role does digital data analysis and analytics play in your research? What potentials does it have? What are its problems?
- What is critical digital sociology? What should the role of critical theory be in it? How does critical digital sociology relate to digital sociology's other three dimensions (digital practices, the analysis of digital technology use in society, digital data analysis)? Why is the relationship between critical digital sociology and big data analytics problematic? What is the role of digital data analysis for critical theory and the role of critical theory for digital data analysis?

Mosco, Vincent. 2016. Marx in the cloud. In *Marx in the age of digital capitalism*, ed. Christian Fuchs and Vincent Mosco, 516–535. Leiden: Brill.

First, read Vincent Mosco's text. Second, work in groups: each group chooses one cloud storage services such as Amazon Web Services, Google Cloud, Apple iCloud, Microsoft Azure, Dropbox, IBM Cloud or VMware's vCloud. Inform yourselves what big data and cloud services these companies offer. Read also the services' terms of use and privacy policies. Ask yourself: Which of the dangers that Vincent Mosco identifies apply to these big data/cloud computing services. In which respect? How could alternatives look like and be organized?

Chandler, David. 2015. A world without causation: Big data and the coming age of posthumanism. Millennium: Journal of International Studies 43 (3): 833-851.

Qiu, Jack L. 2015. Reflections on big data: "Just because it is accessible does not make it ethical". Media, Culture & Society 37 (7): 1089–1094.

These two texts by David Chandler and Jack L. Qiu discuss potential problems of big data analytics. First, read the two texts. Second, work in groups: Make a list of big data analytics' potential dangers. Each group searches for one case of how big data analytics is used in politics, the economy, or culture. Discuss based on the list of potential dangers: How could such dangers affect the case of big data you are studying? What could be potential negative effects on human beings and society? What needs to be done politically in order to avoid such negative effects?

# NOTES

1. www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html (accessed on 27 September 2016). .
2. http://lab.softwarestudies.com.
3. www.cs.cf.ac.uk/cosmos/ethics-resource-guide/.
4. www.cs.cf.ac.uk/cosmos/cosmos-ethics-statement/, accessed on 2 June 2015.