

# Chapter 2

## Internet, Mind and Communication: New Perspectives and Challenges

Xosé Rúas Araújo

### 2.1 Feelings and Computation

Knowing what people is thinking about, as well as recording their internal and external perception, are some of the main challenges in communication, marketing and advertising. In order to arrive to that conscious and unconscious thought, effort is being made to seek out new ways of exploring and observing senses through physiological recordings and psychological-emotional responses to the exposure to stimuli and analysis of texts, images, and audiovisual works.

The media evoke emotions through a simple description of reality or an instant—as the recent picture of a 3 years-old Syrian child lying face-down on a Turkish beach, but it may also arouse aesthetic emotions (Mar and Oatley 2008), as literature, music, visual and performing arts, through fictional constructions in cinema, television, and digital media.

Research on emotions has continuously increased since 1980, when psychological studies and theoretical analysis on human emotions appeared (Frijda 1986), expanding gradually to related areas, such as sociology, politic sciences, anthropology, communication, and cultural studies, among others (Lewis et al. 2008).

Within the emerging field of psychology of the media, the study of the role of emotions and their effects on the media and the entertainment industry increased gradually (Doveling et al. 2011). Different methods and measuring tools are being applied, with a view to find out what is going on inside people's "black box" (Lang 2011).

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X. Rúas Araújo (✉)

Neurocommunication, Advertising and Politic Research Group (NECOM),  
University of Vigo (UVigo), Vigo, Spain  
e-mail: joseras@uvigo.es

Information (as a bit, as a gene, as a computable basic unit) is the beginning of everything (Gleick 2012). Life is basically information, and the evolution has not been stopped at the physiological process, but it has continued with the development of systems and processes, which are necessary in the development of the intelligence and complex lives.

In that process is included the “memes” system, term coined by Richard Dawkins (2000: 21) in order to designate the ideas circulating on society. He pointed out that, if genes are the functional units of heredity, then “memes” are the functional units of cultural heredity and collective knowledge. Thus, as genes spread from person to person through sperm, “memes” move from brain to brain through imitation.

“Memes”—pictures, ideas, quotes and slogans—are imposed on individuals creating similar (opinion) trends to that produced by the space colonization of insect pests, epidemics, or the bodies invasion by cells, following the clustering patterns described by the expert in biomedical and social models, Joshua M. Epstein (2006).

The analysis of digital social networks, in which large part of articles of this book are focused, is inspired on the media ecology, a term coined by Neil Postman to define the study of the media as environments. It aims at showing, through the combination of both biological and technological perspective, a step forward in the evolution of species (media, traditional and digital), which are related in the same space and ambiance (Campos and Rúas 2015) in their struggle for survival.

Consequently, neuroscientists, involved with physical brains, started to realize that they could better understand how the brain functions if they had in mind environments and processes driven by various social structures. For their part, researchers in social sciences also realized that traditional techniques and tools in neurosciences might contribute to the assessment and objective recording of attention and perception of users, consumers and voters.

The brain is not an isolated entity from the outside world, and our behaviour and thoughts are not only the result of a single and conscious unit-mind-, but it is also a social brain, as Gazzaniga (1993) named his book. The philosophy based on placing the man as the measure of all things, that social being by nature, takes on new meanings. The study of emotions constitutes an epistemological turning point in the field of humanities and social sciences, as stressed in one of the chapter of the book.

Hence the appropriateness of the use of qualitative and quantitative methods and the contrast between various techniques and tools, in the search for triangulation, and the defence of interdisciplinarity as the reaffirmation and epistemological constant of the regrouping and sharing of knowledge, as a principle of meeting and communication between disciplines, where each one brings its problems, concepts, and research methods. It is also a valid perspective for the understanding of metamedia, languages, and metalanguages of the so-called network society and hypertextuality, in its evolution towards the digital brain, which means, in the words of Small and Vorgan (2009), a brain’s development according to the ICT.

At present, computer scientists and neuroscientists are trying to disassemble and re-assemble the brain, neuron to neuron, through the so-called “reverse engineering the brain” (Kaku 2014). So far, the most they have managed to rebuild—partially—was the brain of a worm and a fly, and IBM scientists have simulated the 4.5 per cent of neurons and synapses in the human brain through the macro-computer Blue Gene. Nonetheless, the most difficult part is still to come—connecting the brain to the world of sensations, memories and emotions, languages, and culture.

The challenge is even greater if we consider the existence of many different situations that can trigger the same emotion, increasing exponentially the possible combinations and responses. And, although a typical robot can reach a level 1 of consciousness, which describes insects and reptiles (robots are not totally aware that they are robots), if androids want to access to level 2, they have to be able to create a model and world simulation in relation to others, multiplying the number of group members by the emotions and gestures they use to communicate. In short, it is a question of being able to recognize feelings in our facial expressions, gestures, and tones of voice; in other words, in our verbal and non-verbal communication.

In this regard, in the 70s efforts were made to develop a protocol and coding system, cataloguing, and classification of the facial action (Ekman and Friesen 1976; Ekman 2003) to determine which muscular actions were related to the different kinds of emotions, starting from the seven basic emotions (anger, fear, disgust, contempt, joy, sadness, and surprise), with a strong empirical support from that time on (Matsumoto and Ekman 2010).

Also, clinical research on neurosciences provided new avenues for experimental research on marketing and communication, with the implementation of X-ray in computerized tomography (CT), which allowed moving from a flat image to a three-dimensional model (González-Álvarez 2012: 254); the functional magnetic resonance (MRI), which observes the oxygenated blood in different parts of the brain with neuroimaging tools (PET, positron emission tomography); the electroencephalogram (EEG), placing electrodes on the head; biofeedback techniques, which show the physiological reactions in the body, measuring heart rates (Rúas et al. 2015); and the dermal conductance of the skin, in addition to other tools such as the “eye-tracking”, whose details are described in one of the chapters of this book.

Finally, there are tools for analysing and processing texts, language, and discourses, among which is the lexicometrics, using new IT developments (Rúas and Pérez 2015). Indeed, one of the current discussions are focused on the different perception and understanding between printed and online reading. The scanning of people’s brains while they were making searches and reading online and printed texts show that book readers have much more activity in brain regions associated with language, memory and visual processing, but not so much in prefrontal regions associated with decision-making and troubleshooting (Carr 2014, 2012).

The conclusion of this study is that the constant concentration is more difficult when working online, specially given the distraction caused by the existence of

multiple links, which require constant coordination and decision-making capacity and, in consequence, provoke a distraction and a mental workload. McLuhan (2009) had already identified that new media were changing our thoughts and senses and, ultimately, our view of the world and us—“the medium is the message”, with all the power and threat this statement suggested.

Knowledge involves more than just seeking information and requires encoding and decoding data and experiences stored in personal memories. Our working and processing memory, such as a computer’s hardware and software, help us to think, fast and slow (Kahneman 2015).

Another study by Evans (2008), in which he analyses academic articles published in scientific journals over 60 years, concluded that the transition from traditional research to online searching led to a decrease of science and erudition. The tyranny of search engines and databases, which reinforce the prevailing opinion—the most cited, makes people follow scripts written by others and event reproduce contents of books and articles extracted in a partial manner.

It seems to be no room for interpretation, criticism and discussion, as well as subjective and aesthetic judgements, contemplation, encouragement of creativity and imagination, within the industrial and capitalist essence of the Internet, the speed, efficiency, and consumption.

## 2.2 Technology, Culture and Democracy

Often, the quality of communication through the Internet and social networks is only examined from the calculation of text-messages that are sent and registered and, sometimes, answered—mostly as propaganda, without analysing the content, tone, context and environment in which they are produced. The Internet technology is unable by itself to create a fairer and free world, and to cause a transformation of rights and people’s welfare, if this is not accompanied by social, cultural, and political changes. The problem of trying to explain the media and the Internet only from the Internet side, leads us to the Internet-centrism (Morozov 2012), and to a technological determinism, a reduced form to describe the present and predict the future without the necessary perspective that should feed scientific knowledge.

People able to access to new technologies says a lot about the difference between a first and a third world, in digital terms, and a Wide Web of various speeds and different levels of access to information. President Barack Obama had already seen it on his first visit to Google headquarters, noting the large swaths of darkness on the map of the finder they were representing, he said, the disconnected corners of an interconnected world (Beas 2011: 25). The main idea of using technology is to enhance the quality of democracy and to have all government information in an accessible online format, providing all administrative and governmental production (e-Government, Open Government).

However, three years before the investiture of US President Obama, Wikileaks came on the scene, disseminating “secret” documents (the quotation marks respond to the pretext, sometimes unjustified, of internal security’s safeguarding). The initiative quickly became a threat to the credibility of North-American foreign policy, the government, and the net governance—formerly known as “net neutrality”. This last concept is related to the discourse, sometimes naïve, sometimes cynical, of the supposed neutrality of the network, used as an argument to prevent regulation and maintain the arbitrariness of power. The revelations of Julian Assange and the persecution of Edward Snowden—the young man that revealed the US espionage, considered a betrayer and a hero, are good examples of this idea, as well as the “blackouts” decreed by the owners of the networks in some dictatorships, sacrificing the exercise of freedom of expression in favour of commercial interests. Behind the Arab Spring there was also the harsh winter of Western companies selling surveillance and censorship technology to dictatorial regimes.

The recent Apple’s fight with the FBI, which requested to unlock an iPhone used by a gunfire’s author for alleged association with Islamic terrorism, has reopened the debate on the boundary between security and freedom, since this might set a precedent and open the door to future requirements by the US government.

Similarly, that own vision of Internet-centrism leads many researchers to mix up cyberactivism with cyber-utopianism and any virtual intention with real actions. Many real achievements arose from many virtual purposes, but few online political campaigns may achieve success in isolation and not accompanied by a series of offline actions. The so recurrent example of Obama’s election campaign, considered revolutionary from the digital point of view, was aware that any online action would have no sense if it were not accompanied by the consequent offline mobilization. Obama’s team took full advantage of Big Data potential and database access through the use of new and old technologies, such as the sending of customized emails and the phone calls (“N2N” campaign, neighbour to neighbour); the official Obama’s social network ([my.barackobama.com](http://my.barackobama.com)); the organic coordination through the media department; and a digital military headquarters to mobilize an army of fans through the global network but with the slogan “keep it local, keep it real” (Harfoush 2009, 94). All the same time, the old tradition and the American pyramidal structure (one person, five calls or contacts) were not forgotten. It was put into effect long before the discovering of the six degrees of separation, door-to-door visits, and the talking-snacks with contacts and links provided virtually and then in person.

Even when Obama pledged to participate in virtual forums where users and readers voted and chose—becoming content editors, he had to deal with uncomfortable situations that led him to show caution when dealing with this form of digital populism. Experience is showing us the mistake of separating society, culture and politics from technology; analysing the relevance of Facebook and Twitter without looking beyond Facebook and Twitter; replacing moral values with technical values; as well as understanding technique without ethics.

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