

# Chapter 1

## Epistemology of the Digital

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### ABSTRACT

*The debate on the consequences that big data and computational techniques have generated in social sciences has developed from two opposite extremes. A consistent group of scholars today supports an active commitment of sociologists in dealing with the technological dimension of social investigation. The works developed by these “digital sociologists” focus on the definition of a method of social research that adopts a critical posture on the role that digital technology must have in scientific research but, at the same time, creative on the possibilities offered by technology to research. This posture requires great attention to the epistemology of the digital.*

### INTRODUCTION

The debate on the consequences that big data and computational techniques have generated in social sciences has developed from two opposite extremes. On the one hand, those who argued, with sometimes triumphal tones, that big data and computation represented the new gold of the social sciences (Lazer, 2009; Mayer-Schonberger and Cuckier, 2013); on the other hand, those who considered them a dangerous new form of quantophrenia (boyd and Crawford, 2012), or even a threat to empirical sociology based on surveys and interviews (Savage and Burrows, 2007). Nevertheless, a consistent group of scholars today supports an active commitment of sociologists in dealing with the technological dimension of social investigation (Orton-Johnson and Prior, 2013; Lupton, 2015; Daniels et al. 2016). The works developed by these “digital sociologists” focus on the definition of a method of social research that adopts a critical posture on the role that digital technology must have in scientific research, but, at the same time, creative on the possibilities offered by technology to research (Lupton, 2014; Marres, 2017; Savage and Halford, 2017). This posture requires great attention to the epistemology of the digital, which refers not only to the evaluation of the limits of scientific knowledge produced through digital techniques, but also to the

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analysis of the short and long-term consequences that the digital is having on the relationship between the objects of study of sociology and their representation in data, on the relationship between these data and the sociological theories, and on the consequences of technology on the social research methods.

The article is structured as follows. The first paragraph reconstructs the main sociological perspectives on the construction of the objects of study of our discipline and the data that represent them. The second paragraph, recalling the main objectives of social research, focuses on the link between data and theories, and on the possible sequences that these two elements can take on in digital social research. Finally, the third paragraph addresses the issue of innovation in the sociologist's toolbox, trying to define points of discontinuity and continuity between digital techniques and those already consolidated in our discipline. The concluding paragraph summarizes the main epistemological precautions for using big data and computation in an aware and critical way, drawing some lines on which reflection should focus in the future.

## **DIGITAL DATA AND SOCIAL REALITY**

The question of the object of study of sociology refers to the ontological question on the existence of a reality to be investigated that is independent of the social researcher

In the philosophy of science, the answers to this question have been realism, on the one hand, and constructivism, on the other. Realism, marked by the Durkheimian rule "considering social facts as things" (Durkheim 1895: 1963, 35), even in its critical form of twentieth-century neo-positivism, still supports the existence of an objective social reality, independent of both the social actor which is part of it and the scholar who intends to know it. For example, Lakatos (1976) considered social facts nonetheless objective, but their representation as the result of the techniques and background knowledge that the social researcher uses to detect them. On the other hand, constructivism believes that the social actor interprets reality by giving it an individual meaning, and the scholar interferes with reality through points of view (Weber, 1904). Weberian constructivism represented the starting point from which subsequent ontological positions in sociology developed: from phenomenology (Schutz, 1962), to symbolic interactionism (Denzin, 1970), to ethnomethodology (Cicourel, 1976). All these different positions share the idea that the construction of the object of study of sociology is not independent of that numerous set of choices made in every process that leads from abstraction to the translation of social phenomena into empirical data (Cicourel, 1976). Also, Schutz (1962), recalling Weber, does not consider the existence of an object of study given once and for all ("real") relevant, but it is relevant whether its representation is made through procedures shared by the community of observers. The object of study is constructed through the method, and in this way, it emerges as real.

Starting from these considerations, Latour's (1987) epistemological concept developed in the field of sociology of science. For the purposes of our project of digital epistemology, two elements of Latour's conception seem fundamental. The first is the questioning of the distinction between science and technology, which Latour replaces with the term technoscience. The empirical representations of the objects of study of sociology, the data, and the techniques used to construct them, should be understood as "black boxes", mechanisms that are too complex to be entirely analyzed. Only the input and output are known and they are used without being questioned, in fact reifying themselves, becoming real objects. For Hacking (1999), data are social facts that oppose changes and generate reactions on the part of the subjects with whom they relate. For example, the classifications that are made in the social sciences can,

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