Chapter 3
Information:
A Multidimensional Reality

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ABSTRACT

Making an incursion in the forest of problems and theories of information, beyond observing a lack of mutual understanding among information theorists, we find out that information can be understood as a multifaceted reality. The variety of theories is in itself a reflection of the complex nature of information. A systematic approach to these theories, looking for common and divergent understandings render– so to speak – a cubist picture of what information really is, showing for instance its multi-dimensionality. In other words, when we say there is information in cables and organisms, in antennas and societies, in robots and mental states, we do not have to be mistaken: information is considered in each case in different aspects.

Delving into the nature of observation, we will find a solid ground to pose information as a bridge between objects and subjects, therefore providing the possibility to overcome the inveterate segregation of the objectivist and subjectivist understandings. As we will see, such vision also provides the possibility to articulate an understanding of information in its multifaceted reality.

1. INTRODUCTION

"It is hardly to be expected that a single concept of information would satisfactorily account for the numerous possible applications of this general field." (Shannon, 1993, p. 180)

"And just as the same town when seen from different sides will seem quite different – as though it were multiplied perspectivally – the same thing happens here: because of the infinite multitude of simple substances it's as though there were that many different universes; but they are all perspectives on the same one, differing according to the different points of view of the monads." (Leibniz, Monadology, §57)

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In the "information age," finding the current variety of meanings of information is surprising. What is understood by information in the streets, in the industry, in courts, in physics, biology, psychology, sociology, technology or philosophy is so diverse that we could hardly find a common understanding among all these points of view. In contrast to this current situation, in the "age of iron," it was very clear what iron was – probably not regarding its nature, but concerning its usage. The iron brought about a whole spectrum of new possibilities with respect to previous materials: its hardness with respect to cupper and its facility to find the raw material determined a clear difference that caused a change in the technical possibilities evolving in new tools, larger production, greater resourcing and subsequently a cultural and social change. The techniques for producing implements or the understanding about its cosmological origin could differ among different peoples, but the basic properties of hardness and abundance in addition to others common features of metals constituted a common point for any understanding of iron. On the other hand, the materiality of iron provided an ontological toehold for its apprehension, a sure reference – especially from an antique worldview – for the semantics of iron. However concerning information, neither a common understanding, nor a fixed ontological support can be found in the allegedly age of information.

Historically, the usage of information evolves from Greek and Latin roots embracing the fundamental beliefs of each epoch: the objectivist aspects in antiquity, the subjectivist ones in modernity (Peters, 1988; Capurro and Hjørland, 2003). In a bird's eye view, the ontological senses of antiquity (related, for instance, to the *corporaliter* – bodily – values of the Latin information; and coexistent with some epistemological uses in moral or pedagogical contexts) were superseded by the dominancy of pure epistemological senses in modernity. However, since the second half of the XX century this usage started to differentiate, driven by the particular visions of each discipline –either professional or scientific –, at the same time that the objectivist and ontological values of antiquity were recovered, mixed with the subjectivist and epistemological ones still dominant in the ordinary usage (Capurro, 1979, 2009; Segal, 2003; Díaz, 2010a). This differentiation in the use of "information" led to the following consequences: (i) scattering of the different understandings of information and the subsequent gaps among each use, (ii) the belief that information can be useful for anything, (iii) the possibility to bridge between apparently irreconcilable disciplines by means of delving into the common roots among each usage.

These three consequences, which can be observed by means of a detailed scrutiny in the evolution of the concerned scientific disciplines (Segal, 2003; Lyre, 2002), represent extreme positions. The two first poles could be metaphorically branded by the bible images of the Babel tower (complete misunderstanding of multifaceted usages: information for each) and Pentecost (perfect understanding by means of a too general abstraction equidistant from any position, though endangered by empty content: information for all). A third pole corresponds to a midterm mediating between the detailed specificity of the multifaceted usage and the complete abstraction of a general understanding too broad to be useful.

If we intend to vertebrate our information societies around the backbone of information, as the new culture of iron did with respect to the well recognizable new material, we also need a clearer and common understanding of information. Since we have to solve the many problems arisen in our societies and we allege to use information as a new means for bringing about a change in our cultures: we need a clear understanding of information for handling, managing producing and using information in order to meet social needs. If we pursue a *Babel* approach, cooperation, communication and knowing will enter a dissolving path; if we pursue a *Pentecost* approach, we will loss the possibility to come into the specific problems arisen in personal and social life. Therefore, we