

# Information as Reality

By Jannis Kallinikos

## I

There are many ways to describe an age or a culture. All of them, we know, reveal and hide at the same time, for they choose to emphasize certain characteristics and ignore or downplay others. There is thus no exemption for the one I propose here, that is, to view an age or a culture as a **configuration of perceptual habits and modes of conduct and communication**. By perceptual habits I mean the established conventions by which the world is sliced to relevant and irrelevant as well as the ways by which the stimuli thus arising are acted upon, processed and stored. Perceptual habits support and are supported by modes of conduct (e.g. valued courses of action, social roles and arrangements, functional duties) and communication. Modes of conduct or communication are themselves ways of bracketing the world and thus ways of selecting, generating and processing a range of stimuli. Agricultural societies, for instance, are immersed in nature (an artificial nature to be sure most of the times) and the processes of growing and producing crops under conditions that have been and still are considerably shaped by natural phenomena. Industrial societies in turn redefined the experience of humans built over a long evolutionary trajectory rather drastically. Life in modern, industrial societies has been engulfed in considerably artificial and controlled environments within which production, action and communication take place. Among the key emblems of this environment have been the industrial factory (workplace), the urban (technological) fabric of modern cities and the comprehensive transportation infrastructure.

Rather than springing from the encounters with nature, the stimuli that reach people in modern, industrial societies are predominantly generated through organized human activities. Historically, they have come to signify the dominance of culture over nature and cultural over natural information. By cultural information I mean information that is generated through the deployment of the variety of man-made ways of signifying and communicating. Modern environments are thus artificial in the sense of reflecting the values, social and practical arrangements of industrial nations. This is, I think, rather clear and straightforward. What often evades attention

is that the artificial environment of industrialism has given the cognitive activities of information generation, processing and storage a new and more salient role in production of goods and services and social and cultural life.

Industrial societies had (and still have) to monitor massive volumes of products, produced often under large-scale, concentrated arrangements in which a large variety of inputs were combined. These had subsequently to be distributed over large territorial expanses under conditions that varied considerably. As Beniger shows in his considerable work *The Control Revolution*, the accomplishment of these tasks made necessary the development of a complex cognitive machinery that could keep track of the operations under which the production and distribution of goods and services took place. Lists and tables, catalogues and archives, indexing, book-keeping, accounting and financial statements, rules of mimeo and document generation are some of the modes and techniques of this cognitive (information producing) machinery. All these methods of dissecting, measuring and recording reality were essentially aided by the humble medium and technology of writing.

At the same time, the consolidation of the nation state coincided with an elaborate information producing machinery that sought to control birth and death rates, map the growth rate of population and monitor its health state, record the movement of people and goods across regions and borders (e.g. balance of payments) and in general provide a variety of services to businesses and people. Censuses, a variety of statistics and statistical techniques (the word statistics derives from state), a range of documents and repositories (archives) became indispensable to the consolidation of the modern nation state and the smooth and efficient running of its operations. As noted by Weber, the considerable growth of administration in modern society reflects the social arrangements necessary to support the management of written information.

These developments were paralleled by modern culture and social life becoming impregnated by the communicative habits brought about by the increasing diffusion of writing. While the phonetic alphabet was invented by the Greeks, typography and the printing press gave it such a momentum as to make it the key medium of cultural production (e.g. the novel, the newspaper), information generation, processing and storage. The impregnation and shaping of modern industrial societies by writing is a

recurrent theme of western scholarship of the highest quality, i.e. Elisabeth Eisenstein, Vilhem Flusser, Jack Goody, Claude Levis Strauss, Lewis Mumford, Walter Ong are among them. Marshall McLuhan went so far as to attribute the linear rationalism and the decline of imaginative faculties that he thought as characteristics of modern people to the cognitive habits promoted by the proceduralism of writing.

In this sense, modern, industrial societies have been significantly shaped by the configuration of perceptual habits and modes of action and communication that writing and its industrial version (typography) promoted. This configuration is over the last few decades being subjected to considerable changes whose overall cultural (and economic and social) significance remains not well understood. There is of course a huge and continuously growing literature on the impact of the internet and the perceptual and cognitive habits promoted by the impressive diffusion of computational (digital) artefacts in everyday life but an overall understanding is still missing. Much of this literature is of high quality and I will draw on it seeking to articulate my view of how computational information marks an epochal change in the configuration of perceptual habits and modes of conduct and communication that industrialism and modernity established over the past two or three centuries.

## II

Electronic, computationally (through automated rules) generated information both continues the legacy of writing but also breaks away from it in some significant ways. Before proceed further, it would perhaps be worth drawing attention to the fact that cultural information is artificial, in the sense of entailing the crafting and deployment of marks (signs, symbols) to describe reality or, as it is often happens, to express ideas, feelings and thoughts. Marks are crafted through human agreement. The relationship between the mark and what is supposed to convey or signify is for the most part arbitrary. If iconic (a picture) or indexical (a pointer) marks bear some relationship to what they seek to depict based on resemblance or proximity, this is not the case with alphabetic and numerical systems of notation that have acquired such a salience in modernity.

Drawing on Albert Borgmann (1992, 1999) I will conceive of cultural information along three axes. Signs and the information they convey can be deployed to **describe**

**reality.** Descriptions are essential cognitive inputs in the life of people. One can describe a social state (e.g. a demonstration, a building, a person), a natural phenomenon, an economic transaction. Descriptions provide information that people draw on to learn something or navigate in the complex social landscape of modern societies. But we also deploy signs **to prescribe something**, that is to provide information of what is allowed or not, of how something should be done or what steps to follow in constructing an object. The archetype of prescription, says Borgmann, is the recipe. Linguists and semioticians has since long distinguished between the descriptive and prescriptive functions of language and semiotic systems. Descriptions can be tested against reality, prescriptions may not. Rightness rather than truth applies to the evaluation of prescriptions. At some elementary level all prescriptions entail descriptions yet the social function of prescription is quite different from that of description. A map is a hybrid document that entails both descriptions and prescriptions.

Information about (a description) and for (a prescription) reality has been used in abundance in industrial societies and before them. Massively deployed, as it is often done in the contemporary stage of computation, descriptions and prescriptions may combine to generate an interesting effect in which reality is not any longer described nor prescribed but altogether erased, effaced or displaced. Borgmann calls this **information as reality**. Neither about nor for, information replaces reality altogether. Some people refer to these developments as virtual environments but the term is poor and in some respects misleading. Virtual reality always presupposes reality, if only in order to contrast itself to it. Computational information, the way I try to describe it, does not. It has completely emancipated itself from reality, living a life of its own. Much of contemporary information is generated out of already available information through recycling (duplication) or recombination. Let me sketch a few thoughts with respect to how this happens.

The key instrument of what I refer to as the technological paradigm of computation is the human/machine interface that by and large coincides with the computer screen (and the mouse and keyboard as well). The descriptions and prescriptions of reality that reach the screen are artificial in ways that information in its written form never was. Computational information in the screen is linked to an elaborate, through often

invisible, system of technological links and dependencies that lead from the interface to the “interior” of the digital machine and the wider infrastructure by which the behaviour and manipulation of screen objects (from pictures to texts to databases) is rendered possible. The overwhelming part of this universe is hidden and beyond the discretion of the user who can initiate but never control other than superficially the processes of invoking, acting upon and manipulating screen objects. Usually, the more complex the computational tasks performed the less control the user generally has over them. Search engines and databases can be utilized but seldom can the average user intervene with the code decreeing their operation.

A considerable part of the stimuli confronting contemporary people are thus produced through a complex computational mechanics about which humans cannot have knowledge by experience or acquaintance. Does this really matter? In some cases it doesn't. Why knowing all these boring technological details by which information is generated? In others, it may even save considerable human energy (as in the case of automating routine calculations) and re-orient it to more useful and meaningful tasks. In still other cases it may matter considerably. What it may get lost through the black-boxing of computational operations may be forms of human experience that cannot compete with computation in terms of speed, precision or efficiency, but which they may still be valued for a variety of reasons. The long debate over the loss of tacit knowledge consequent upon computerization represents a case in point. Other key issues are related to the transparency of the procedures of computation and the control that may result from the fact that people know very little about the underlying mechanics of information generation. The significance of these themes are brought to the fore by considerable legal scholarship on the regulative implications of computational technology (Lessig, Benkler, Teubner). Overall the issue of being fed the perception inputs through processes over which one has little control cannot easily be trivialised as technophiles often seek to do.

The conditions under which television programs are produced and disseminated may seem remarkably similar to the themes I identify here. Nevertheless there are important differences involved. Despite their heavy technological reliance, television programs are produced under conditions that may remain hidden but could still be imagined due to the fact that they are rooted in the experience people have of human

affairs. Computation differs remarkably in this respect, since the mechanics it gives rise to cannot be reconstructed in any significance detail by the average user. Television programs lack the computational mechanics by which information and the objects it supports are assembled and manipulated. Another way of making these claims is to point out the hidden side of interactivity. Interactivity with artificial objects can only be accomplished through a complex technological infrastructure that brings back life and animates what has been abstracted from the natural flow of people and things. In this respect the artificiality of computational information is of a quite different nature than that of writing and the written production of descriptions, depictions and prescriptions. It is not only the artificiality of signs and the distance to what is described, depicted or prescribed that matters. It is rather what I have elsewhere referred to as the elaborate vertical stratification of computational information.

### III

The effacement of real reality which technological information generates is further associated with the analytic reductionism of computation. The hidden operations by which interactive screen behaviour is sustained are arrived at through a relentless decomposition of things, states or processes and their reassembly to artificial computational objects. There is no other way to construct artificial objects. Neither before in history has this been as true as it is in the case of computation. The mathematical roots of computation are not accidental and neither is the fact that all computational objects are ultimately numerical objects produced algorithmically. These observations may seem trivial but they may have far reaching implications. For, they in principle imply the replacement of perception and the perceptual inputs people acquire through confrontation with the world by an analytic logic of algorithmic representation. To replace the hard texture of things and the powerfulness of human encounters with numerical operations amounts to neither describing nor prescribing reality but replacing it altogether.

But the reconstruction of perceptual inputs and modes of acting and communicating does not simply derive from the analytic reductionism and vertical stratification of computational objects. It is also generated by the horizontal expansion that coincides with the construction of interoperable systems and platforms by means of which a

variety of information sources can be recombined. Analytical reductionism reconstructs the world from below. Interoperability accomplishes roughly similar results by expanding the grip information obtains over action and communication and stretching significantly the horizon of information. Some of the effects of combining information from different sources are undeniably positive. They confer reality a depth similar to that of the binocular vision. By combining, for instance, profiles of illnesses with demographic or climate conditions it maybe possible to obtain an understanding of the underlying causalities of these illnesses. All systematic comparisons derived from different information sources carry the promise of an additional and deeper understanding of reality, but this of course depends on the accuracy or relevance of the processes by which aspects of reality are codified to information. There is no guarantee here that this is done properly or with those interests in mind that reflect the welfare of people and not the goals of particular groups. More important perhaps is the fact that the sheer volume of information makes the comparison of information sources a technological venture. It is not possible for humans to compare databases or to search information manually. Both search engines and most crucially profiling are a reminiscence of how far from reality such comparisons may lead. How many fictitious characters are produced, José-Carlos Mariátegui and me asked in an article in the French portal Telos, by the running of huge databases by algorithmic crawlers of the financial and criminal authorities.

There are several other crucial issues related to the remaking of time and the immersion of information into the present. Information is not knowledge as many people are prone to think of it. To be informed does not necessarily mean to know, at least not in the conventional meaning of knowledge. Information presupposes often knowledge and memory but in contrast to the durability of them it is highly ephemeral and disposable. The short-lived character of information is intimately connected with the making of the event/contingency into a key characteristic of modern life. These phenomena necessitate a thorough analysis of modernity and its late modern (or post-modern) transformation, a task that I propose to undertake in my next visit and talk in Casa Mariategui.

I will finish this presentation by a small sample from “Choruses from The Rock” (Coros de “La Piedra”) by T.S. Elliot. The year is 1934 but prophetic vision doesn’t allow itself to be obscured by the shapeless character of things yet to come.

Where is the life we have lost in living?

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?