Experimental Information and Experimental Knowledge

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> *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?*
>
> *From T.S. Eliot's Choruses from The Rock (1934)*

In this paper we contrast information and knowledge, and argue that the former relates to experiments, whereas the latter relates to experience. We also discuss science and technology, following the conceptualisation of these terms as proposed by Borgmann and Simpson (Borgmann, 1999; Mitcham, 1994) and argue that these two concepts should be contextualised based on our notions of information and knowledge. More specifically, we argue that information can result from scientific and technological modelling, whereas knowledge is an encompassing notion that itself explains and justifies --and therefore cannot be explained by-- science and technology.

Our argumentation is based on the current perception that science and technology, although successful structuring forces of present day society, have not been sufficient to bring this society to a satisfactory state of equilibrium for all (Feenberg, 2002).

The interplay between science and technology, individualism and the money-economy, is here referred to as technoscience. While acknowledging the critical relevance of the money-economy and of individualism to understand technoscience, this paper focuses on its scientific and technological dimensions.

In theory, the ever expanding machinery of production should ensure the physical needs of society. In practice, however, only a minority has been observed to fully benefit from the technoscientific apparatus, leading to an unbalance manifested through ecological and economical crises.

In response to these crises, three attitudes can emerge: (1) an attempt to retreat to a primeval time free of technoscience, which is clearly a logical impossibility; (2) to move on looking for solutions within the technoscientific framework, which makes sense but has proven to be insufficient to solve the pressing crises of our time; (3) to look for expanded views of reality, in which technoscience assumes a relative position in a larger framework. In this paper we explore this third attitude, considering our criticisms for the first two.

The empirical, the experimental and the experiential are three degrees of consciousness through which individuals relate to each other and to the environment. The empirical relates to given data. The experimental is a specialised intervention with a definite, pre-established purpose, in search for a result characterised as a piece of *information*. Experiments pervade nearly all aspects of modern life, which becomes as a consequence fragmented into multiple domains of interest by the corresponding experiments that provide access to them. This is indeed the essence of technoscience.

Information is the utilitarian means to goal-driven action. It is the foundation for technoscience, which can thus be characterised as the world of methodical experimentation that identifies regularities and laws, and therefore law-structured information about phenomena, which is then embodied in technological devices and instruments and gives room to goal-driven action.

To give a concrete illustrative example, by means of clocks we have time – a natural event to be experienced – reduced to its informational content, i.e. mathematical or homogeneous linear time, represented by points on a straight line. And by means of such linear time reality is reduced to a logical description of it, an evolution from one state to the next, a straight line of mathematical time points. This is a useful approach to gather information and develop an instrumental map of reality, which provides us with a purposefully and goal-driven, albeit reduced vision of reality and of actual time (Simpson, 1994).

In contrast with the experimental, which places information as a mediator between agents and reality, the experiential relates to personal, unmediated contact with reality. As an example, consider a child taken by her mother to the paediatrician. The paediatrician is technoscientifically prepared to collect all sorts of information about the child, through clinical exams and physiological data, i.e. from the empirical the paediatrician can obtain experimental information about the patient. The paediatrician perceives the child through information, and as a consequence can only know from her what can be communicated through information. It is the mother, however, who – although not informed by experimental facts – truly knows her child. The experiential is the pathway to true knowledge, and this pathway does not necessarily go across the experimental or through information.

Through the experiential, the separation between object and subject disappears. The result of this amalgamation is what we propose to be coined knowledge. Knowledge must be experienced, and based on experiential knowledge technoscience can be characterised and explained. Knowledge, however, cannot be the object of experimentation, nor can be explained based on informational terms. Therefore, technoscience cannot explain knowledge.

The move from experiment to experience situates the experimental in the context of holistic experience, from which it was separated by the logical and methodological constitution of the experimental itself. It is a necessary awareness of the

context, of its irreducibility to a text, which brings about the relative dimension of the conceptual world of the experimental, avoiding the methodological mistake of promoting it to a status of absolute and final rendering of reality (Whitehead, 1979).

Technoscience has been relatively successful in satisfying our needs and desires. Its reckless power and autonomy, however, threaten both nature and human freedom, as recent ecological and economical crises indicate. Denying technoscience and attempting to move to a primeval way of life is clearly impossible. Improved management of resources, as proposed by novel economical and ecological models, may be necessary and useful but not sufficient to overcome the crises. A more successful alternative can be to take knowledge and experience as the fundamental forms of relation between agents, thus moving from the experimental to the experiential in relationship with reality. This is one of the manifold expressions of the cosmotheandric myth (Pannikar and Eastham, 1993), which overcomes rationalistic dualism, illuminates and situates our experiences so that they become actual experiences of the whole. This myth makes us aware that the cosmos, the primordial beauty, is not a warehouse of resources available for exploitation, but our home and our body.

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