# Psychology and Sustainability, *Homo Technicus* and Slow Tech

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## Psychology and Sustainability, Homo Technicus and Slow Tech

In previous issues of *Visions for Sustainability* we have often published papers that consider the relationship between psychology and sustainability. On the one hand, researchers have examined various aspects of the incompatibility between how human societies and individuals behave in order to satisfy their needs and their desires and the natural processes that are essential for maintaining ecological balance and integrity, both for the people themselves and the environments they inhabit. Problems of sustainability are clearly related to human behaviours and therefore are a part of the psychological sphere. Studies have often focused on examining ways of promoting pro-environmental and reducing anti-environmental behaviours.

At the same time, other researchers have analysed ways in which developments in society have increasingly reduced the level of connectedness between people and nature and how this can lead to a condition of psychological distress and disease. Studies in this field are concerned with ways in which connection to nature can be promoted so as to both enhance people's wellbeing, thereby empowering them to realize to the full their potential in all spheres of life, and as a result also stimulate them to behave in ways that are respectful of and beneficial for the environment.

This issue contains two papers that deal with different aspects of these fields of research, together with a special section on "slow tech", which examines ways in which ICT in particular has radically changed the relationships between human beings and their relationship with the environment.

In "'From Ego to Eco': The contribution of Ecopsychology to the Current Environmental Crisis Management" Marcella Danon looks at how ecopsychology develops out of the meeting between ecology and psychology, starting from an analysis of the "ego dimension", one that is unable to grasp the connections with its surroundings, is deeply connected with an insensitive and merely utilitarian attitude towards the environment, its resources, and the biosphere. She then outlines a path of personal growth that leads to developing respect and empathy towards others and how this can facilitate a qualitative leap towards an "eco dimension". She argues that this can promote a change in the perception of oneself and towards the world by helping people to consolidate a deeper awareness of themselves and interact in a dialogic way both with the human and non-human environment.

In "The impact of Biophilic Built Environment on Psychological Restoration within Student Hostels", Farhan Asim and Venu Shree focus on how university students living in hostels may be exposed to various aspects of stress and anxiety which burden them psychologically and cause mental fatigue. They look at ways to introduce students to natural environments which help replenish their mental resources and improve fatigued cognitive functions. They propose a link between Attention Restoration Theory (ART) and the Biophilia Hypothesis as a way of exploring Biophilic Design in order to research this aspect of human psychology and its relationship to nature.

**Planetary, collective and individual limits**

While the special section focuses attention on aspects of "slow tech" related to ICT, it is important to consider this in the broad context of how the path of human evolution has always been characterized by the ways in which *homo technicus* has developed new technologies at ever-increasing levels of scale, complexity and impact.

As Kaplan puts it:

> Technologies are best seen as systems that combine technique and activities with implements and artefacts, within a social context of organization in which the technologies are developed, employed, and administered. They alter patterns of human activity and institutions by making worlds that shape our culture and our environment. If technology consists of not only tools, implements, and artefacts, but also whole networks of social relations that structure, limit, and enable social life, then we can say that a circle exists between humanity and technology, each shaping and affecting the other. Technologies are fashioned to reflect and extend human interests, activities, and social arrangements, which are, in turn, conditioned, structured, and transformed by technological systems" (Kaplan, 2003, pp. 167-168).

The papers published in this issue deal with a range of questions related to the various narratives that accompany technological innovations, their reference paradigms, the dominant ideas and economic interests that drive them. In particular the focus is on the impact of digital technologies on our lives. The point of departure for each paper was a series of meetings held earlier this year at the Centro Studi Sereno

Regis in Turin, Italy, aimed at both teachers and members of society at large. The purpose of each meeting was to offer input and opportunities to debate issues concerning the need to develop technologies that are socially desirable, ethically acceptable and environmentally sustainable. The ideas proposed and debated, together with suggestions for reading, documents and images, were designed to provide teachers of all subjects with elements useful for developing transdisciplinary pathways with their students. The focus was on the relationship between human activities and behaviours and the limits they encounter, at the level of planetary limits (Meadows e al., 1972) and the collective and individual limits which are emerging linked to our capacity to absorb the growing bit tsunami. The digital revolution risks dramatically accelerating many processes without respecting not only the limits of natural resources and functions but also the limits of our minds, which require time, and at times silence, in order to be able to understand, reflect and choose. Awareness of these limits can facilitate, on the one hand, application of the ethics of error (the principle of caution, making reversible choices) and, on the other hand, the recovery of a correct relationship of dependency of humanity on natural systems, above all in this period of unforeseen, and ever more unforeseeable, global transformation of the planet.

**Informed opinion on complex and controversial issues**

From the initial development of instruments for communication and the transfer of information, the digital world has rapidly become the first line of interface between people and institutions through the accumulation and manipulation of Big Data. Digital technology has also become the tool through which we frame our knowledge and relationship with the natural systems. Drawing on an analysis proposed by the French philosopher Jacques Ellul over thirty years ago in *Humiliation of the Word* (1985), Foltz and Foltz (2002) speak of a new challenge that comes not from spoken or written words but from electronic media:

> … through the eruption of unlimited artificial images, we have reduced truth to the order of reality and banished the shy and fleeting expression of truth. Strangest of all, we are not dealing with the identification of truth with reality already found in science. Instead, this "reality" is really fiction – literally simulated, depicted (…). No longer are we surrounded by fields, woods, and rivers, but by signs signals, billboards, screens, labels, and trademarks: this is our universe. And when the screen shows us a living reality, such as people's faces or other countries, this is still a fiction: it is constructed and recombined reality . . . (p. 228)

Ellul's analysis anticipated what has become the experience of people today: from the proliferation of false truth and fake news to the preoccupation with personal image as mediated via social media; from the alarming rise in cyber-attacks and cyber frauds for which conventional security systems appear ill-equipped to the deployment of information technologies in complex military operations. In this scenario there are many questions which need to be asked from the perspective of scientists, citizens and politicians alike. Discussion of the risks or implications of advanced technology often tend to lead to a pronounced polarization of positions, at times expressed in terms of a juxtaposition between good and evil. Such a situation creates considerable problems for the building of a public opinion based on facts and rational argument. For example, recently the blog of the prestigious magazine Scientific American published two articles a few days apart from each other, focusing on the design and installation of communication networks using '5G' electromagnetic waves. The first one is written by Joel M. Moskowitz, PhD, director of the Center for Family and Community Health in the School of Public Health at the University of California, Berkeley. Since 2009 he has been translating and disseminating the research on wireless radiation health effects, and signed the *International EMF Scientist Appeal*, which calls for stronger exposure limits. Moskovitz appeals to the precautionary principle and asserts:

> As a society, should we invest hundreds of billions of dollars deploying 5G, a cellular technology that requires the installation of 800,000 or more new cell antenna sites in the U.S. close to where we live, work and play? Instead, we should support the recommendations of the 250 scientists and medical doctors who signed the 5G Appeal that calls for an immediate moratorium on the deployment of 5G and demand that our government fund the research needed to adopt biologically based exposure limits that protect our health and safety.

A few days later arrived the following reply from David Robert Grimes, a cancer researcher, physicist and science writer, based at Dublin City University and a visiting researcher at the University of Oxford:

> [Moskowitz]' piece has resonated with the

> anti-5G movement, generating heated discussion online—but, alas, it is one that pivots on fringe views and fatally flawed conjecture, attempting to circumvent scientific consensus with scaremongering. […] While it's pragmatic and laudable to constantly monitor for any potential emergent effects, the overwhelming weight of the evidence to date does not support the hypothesis that our current cellular technology is carcinogenic.

The positions assumed by the two authors are typical of many situations involving scientific and technological innovations. A significant transition has occurred from traditional scientific practice – dealing with the measurement of a limited number of variables in controlled laboratory conditions – to contemporary issues involving experiments which literally take place 'in the real world'. The 'samples' used for testing are the very people who consume, purchase and receive the impacts of technological products and services and the large-scale experiments can often lead to unforeseen outcomes with far-ranging consequences at both spatial and temporal levels. Such conditions call for the development of greater awareness in civil society of both the nature and the limitations of the techno-scientific enterprise. The public is not in a position to develop an informed opinion about such complex and controversial issues. However, as members of the public, we are all involved in ongoing experiments which require that our experiences be articulated, voiced and shared. In this respect, the words of Isabelle Stengers are particularly significant when, in her book *A Manifesto for Slow Science* (2017), she calls for a pathway to an alternative science, arguing that researchers should refuse to allow their expertise to be used to silence or deviate the concerns of the public, or to spread the belief that scientific progress is inevitable and will resolve all of society's problems. Rather, science must engage openly and honestly with an intelligent public and be clear about the kind of knowledge it is capable of producing and the limits of that knowledge and the uses to which it can be put.

**Slow Tech and intelligent choices**

The papers which constitute this special section all address issues related to the essence of the oxymoron "Slow Tech". There is a widespread belief that technological innovation must necessarily be associated with increasing speed. Especially within the field of ICT, the speed of transmission of signals is increasingly identified with the speed of technological change and the durability of technological artefacts. Nevertheless, a vital question that we should pose is whether technological change necessarily involves a process of speeding up and what are the consequences of such a race towards "newness" based on this idea of innovation, come what may. Indeed, the reality created by the digital revolution is one in which many other processes are also accelerated, without consideration of the planetary limits (resource use; environmental impacts, etc.) nor of our minds, which can only absorb and elaborate a limited quantity of stimuli. As we are now completely immersed in the infosphere, we need even more time to comprehend, reflect, and make intelligent choices, consider the potential and limitations of computational processes and applications of artificial intelligence, learn how to handle one's own digital identity and reflect on the ethical dimensions of digital technologies.

In "Slow Tech: Towards an ICT for the Anthropocene Age", Norberto Patrignani and Diane Whitehouse offer a broad overview of how ICT is shaping both our society and planet in terms of both increasing and unknown impacts. They argue that the entire ICT supply chain should move towards a more systemic view of the infosphere and elaborate on the concept of *Slow Tech* as what they call a *heuristic compass* for discovering new directions in the design of future complex socio-technical systems. What is necessary is the development of ICT that is *good*, *clean*, and *fair, socially desirable*, *environmentally sustainable*, and *ethically acceptable*.

In "Educational Unsustainability in Sub-Saharan Africa: In Search of Counter-Narratives to Policy Pressures and Exponential Tech Growth"**,** Michael Gallagher illustrates how the educational systems of sub-Saharan Africa have become increasingly in the hands of a network of global actors, with an explicit and inexorable link to technology and an implicit erosion of local educational autonomy as a result. He argues that there is an urgent need for rethinking autonomous space for participatory approaches, degrowth approaches, rights to repair and community technologies, in the face of policy pressures which are creating a largely unsustainable acceleration of educational technology.

In "Peer Education as a Means of Contrasting Cyberbullying and Online Violence. The Testimony of Young Protagonists", Ilaria Zomer shows how educational work concerning the issue of online violence takes place at the frontier between generations and between virtual and real. This is a methodological frontier whose complexity can only be understood through the testimony of those who are directly involved.

She offers examples of a range of testimonies gathered through letter writing during peer education activities.

In "Faraway, So Close: Bringing the Online on Stage", Luca Giacomini and Giorgio Bertolusso offer an example of how science and technology on the one hand and various forms of artistic expression on the other, can interact in complementary and mutually enriching ways. They propose ways in which experiences that involve both theatre and digital technology can build awareness of the complex nature of each of them and the roles they can play in the lives of each one of us. In "Mountains and Slow Tech. Evolutionary processes at the Interface with Natural and Virtual Ecosystems", Luca Giunti and Elena Camino offer us complementary perspectives on the increasing human alienation from nature and how facing the enormity of the spatial and temporal dimensions embodied by mountain ranges and relating them to the same dimensions within human technology can help us understand ways in which natural and virtual worlds meet and interact. Contemplating the multiple perspectives that mountains offer as an example of nature and considering the vast scale of the impact of digital technologies obliges us to ask vital questions that can no longer be avoided. In "The Evolution of ICT: Greater Benefits and Greater Challenges", Norberto Patrignani and Laura Colucci-Gray consider various aspects of the gap between the impact of ICT and the development of human awareness in this respect and reflect on the immense challenge of seeking to understand digital technologies and the ways in which they continue to influence and shape our ways of thinking and making decisions in our everyday lives. A theme touched on by Patrignani and Colucci-Gray, which is of great relevance but as yet very little debated in society, is that of the military applications of ICT. For example, the technology of swarming – drones deployed in squadrons, able to think independently and operate as a pack – is in its infancy, but armed forces around the world are investing millions of pounds in its development. In 2016, the US showed a video of more than 100 micro-drones over a lake in California manoeuvring, in the words of an air force scientist as "a collective organism, sharing one distributed brain for decision-making and adapting to each other like swarms in nature"[1]. Once again, we are faced by the enormity of the ethical dimension that is opened up through the interaction between natural, human and artificial intelligences. Future issues of our journal will certainly explore this theme further, together with that of the environmental impacts of ICT which will place humanity face to face with the urgent necessity to reduce resource extraction and waste as well as energy consumption, which are pushing the Planet towards transitions which will potentially mark the end of humanity on the Earth, making room for new forms of life and and new evolutionary networks.

What is essential is understanding whether and how our technologies can impact in a positive way on these processes. Moreover, human relations are what "largely determine who uses [technologies] and for what purposes […] Technology, as such, makes nothing happen" (Marx, 2010, p.577). The human use of technology is the determining factor in terms of its impact.

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