Short communication

BIOMEDICAL Journal of Scientific & Technical Research

ISSN: 2574 -1241

DOI: 10.26717/BJSTR.2019.22.003733

"Intelligent" Technology and Systems Autonomy

Hans Lenk*

University of Karlsruhe, Germany

***Corresponding author:** Hans Lenk, University of Karlsruhe, Neubrunnenschlag 15D-76337 Waldbronn, Germany

ARTICLE INFO

Received: October 17, 2019

Published: October 25, 2019

Citation: Hans Lenk. "Intelligent" Technology and Systems Autonomy. Biomed J Sci & Tech Res 22(2)-2019. BJSTR. MS.ID.003733.

ABSTRACT

Some characteristic features of the New Technologies are presented and discussed as, e.g., operationalization, computerization, models and modularity, virtuality and artificiality, interdisciplinary interaction, comprehensive and complex systems, telematization and remote control, robotics and AI technology and automatization as well as "socio-eco-techno-systems".

Keywords: "Intelligent" New Technologies; Robots; Remote Control; Systems Dynamics; Systems Engineering; Systems Technocracy; Socio-Eco-Techno-Systems

Introduction

Telematization, Techno-reality and Systems Historicity

Telematization of almost everything; the world-wide ubiquitous "electronical" presence ("hic et nunc et ubique") will make the idea of a global information village come true - not only in passive attendance or ubiquitous media coverage and (pseudo-) presence. But there are also already locally separated; but functionally coordinated teams working on giant "delocalized" or separated projects or abstract "dissipated "systems enterprises; designs; or networks (e.g.; via the Internet). The "second nature"; the technology-enacted "reality" engendered by information networks takes on relief and will be getting ever more impact. The media "technicized" (a kind of) reality; indeed, constitute a techno-enacted reality. This second-hand informational reality gains momentum and social impact; has effectively become a "socially real reality"; a "socio-(information-)technological" one; an IT-reality; so, to speak.

Moreover; a characteristic information-technological historicity has been developing in complex systems: Not only comprehensive information systems; expert systems; and computerized decision-making systems which are designed; developed; operated on and controlled by many programmers and agencies take on a certain "history" of their own and history-dependence („historicity") that mirrors the development of "the system" thus far; but also a representation of world history by and in the media systems seems to display a peculiar historicity for this "media-ted" virtual reality: "quod non in system is non in realitate": Ironically; but really it seems to come true that "everything that is not in the very systems is not (any more to be considered) real".

Robots and Remote Control

New electronic and multimedia technologies allow remote control and intelligent sensing at a distance or in inaccessible environments (e.g.; robot manipulation in nuclear plants; in nano-compartments and environments; or in outer space technology); thus multiplying manipulative and technological power in extension and scope; it also allows us to speak of reactions of the technological instruments and systems as "intelligent". I am not denying thereby the extant phenomena of degradation and decay in information storage via electronic systems, but I claim that very complex information systems take on a quasi-life of their own insofar as no individual person or programmer can survey any more all the developments of a very complex distributed net functioning by co-operation and via all or, rather, practically innumerable parallel influences of millions of interactive users and programmers. Robotization right now seems to take over many branches of professional and also everyday life (think of ever-expanding automatic production lines; automatized vehicles and "smart homes" are in the offing). These trends will proliferate and widely disseminate in all fields of future technology-guided production and in many fields of normal life.

Again; we may in fact improve the manipulation of far-reaching information systems and remote effects (including in interplanetary unmanned spaceships or satellites and in nuclear plant chambers) as well as in chemical reactors and regarding chaos technology for manipulating the state or phase space orbits of complex dynamic systems etc. Here; thus far unapproachable constituents and components as well as processes seem to come into the reach of technological manipulation – and even some kind of control; though maybe of a very indirect provenance. Not only in sensing and remote-control instruments and systems are feedback loops built in; but in a plethora of instruments and systems more and more sensitive feedback control and "intelligent" "decision-making" techniques and "learning" procedures are progressively gaining momentum. This provides a kind of flexible systems autonomy or; at times; error-correcting ultra-stability. Even in the designing; building; checking of machines; programs; technological and organizational systems there is a tendency to eliminate human interference: Machines build machines; machines check machines; programs control and check machines; (meta-)programs supervise programs. In effect; this involves a meta-level self-applicability of overarching abstract procedures; programs etc. amounting to a sort of "reflexive" or "self-referential" applicability – a meta-functionality of sorts or even a meta-autonomy.

Artificial Technological Needs and Problems-generation

There is an outstanding trend towards artificial technological needs and problems-generation engendered on the basis of potential solutions produced by system(at) ic searches for multiplying and exhausting the options including possible utilization: Even for R&D in technology the social systems character became obvious already some decades ago: There is a significant tendency systematically and methodologically to sift and exhaust potentials; possibilities; and options (e.g.; by the so-called "morphological matrix" after Zwicky and Ropohl). Frequently; only after having detected several products; processes; or procedures in a systematic search an application will be launched or even a new "need" might be discovered; created; or even manipulated now to be satisfied by the technological development already completed. Sometimes; the technological solution or invention would precede the need or the problem to be solved (as; e.g.; Marx had already predicted).

Socio-systems Technology and Systems Technocracy

Systems orientation as mentioned; systems engineering, and the managing problems of social systems lead to interlocking socio-techno systems (Ropohl). Even in technology per se an intrinsically inseparable; indissoluble social systems syndrome is provoked by the ever-growing; ever accelerating; ever more encompassing technological measures intrinsically embedded in social contexts. (We should even extend the systems perspective to include ecological factors and talk of socio-eco-techno systems; "SET" systems for short.)

As I predicted already in 1973; systems-technocratic tendencies will gain impact and importance. This means that many different political; cultural; and human(itarian) problems of modern societies will tend to be conceived of and discussed; as well as attacked – and maybe partially solved – by systems-technological means. Systems-technological administrations are currently gaining momentum everywhere. The computerization of almost everything runs wild (including the „booming "; grey zone of computer crimes). Systems-technocratic dangers seem to be intimately integrated with the encompassing systems-technological approaches raising the intriguing (and in part new) problems of personality- and data protection against informational tapping; information invasions; and encroachment: With respect to information technologies; social and legal problems of data protection and privacy; as well as protection of the integrity and dignity of the human person and aspects of human(itarian) values and humaneness; even of what it means (and when the embryo starts) to be human – all these problems are now getting a particular urgency – notably in applied information technology and biotechnology.

Acknowledgement

None.

Conflict of Interest

No conflict of interest.

References

1. Lenk H (2003) Responsibility and risk minimization. Human Factors and Ergonomics in Manufacturing 13: 203-222.
2. Recognizing the structural features of new technologies (2005) In vol 1 Mitcham, C. (Eds.). Encyclopedia of Science, Technology, and Ethics. Detroit and (2015) vol 1 (2nd Edn.) JB Holbrook: Ethics, Science, Technology, and Engineering. 4 vols. Gale, Farmington Hills, MI, USA.
3. (2017) Global TechnoScience and Responsibility. Berlin-Muenster.
4. (2017) Scheme Dynamics, Projektverlag, Bochum- Freiburg, Germany.
5. (2019) Not a Long Way to Concrete Humanity? Projektverlag, Bochum – Freiburg, Germany.
6. Lenk H, Maring M (2001) Advances and Problems in the Philosophy of Technology. Muenster: LIT. (Also: Agazzi, E. - Lenk, H. (Eds.): Advances in the Philosophy of Technology. Newark, DE 1999, in: Techne 4(1998), no. 1; Philosophy & Technology 4 (1998), no. 2).

ISSN: 2574-1241

DOI: 10.26717/BJSTR.2019.22.003733

Hans Lenk. Biomed J Sci & Tech Res