



Education and Culture DG

Europe and the US in the 1960s

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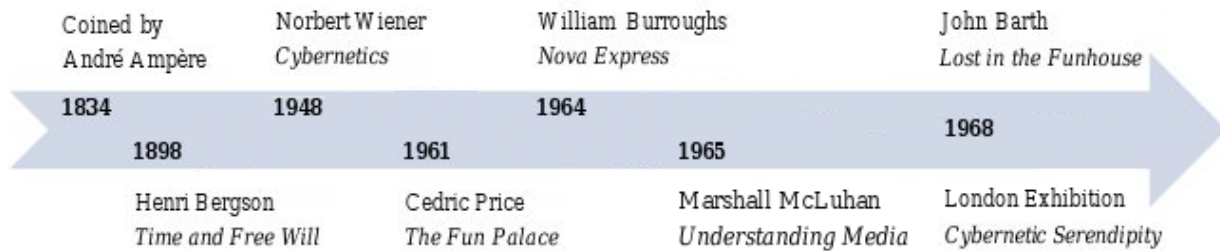
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Cybernetic Environments:

Space, Users, Functions, and Communication among its Elements

A Short Timeline of Cybernetics and Cybernetic Art:



What constitutes a Cybernetic Environment?

Cybernetics is the study of control and communication. It analyzes the feedback processes in self-regulating systems like animals and machines and the communication with their environment. The spatiality of these systems refers not only to actual, physical locations, but also to social spaces and relationships. Per definition, cybernetic environments surround us, permeate us and connect all living and dead matter in the universe by way of interaction.

Time and its Function in Cybernetic Cycles: The Feedback Loop and Bergsonian *durée*

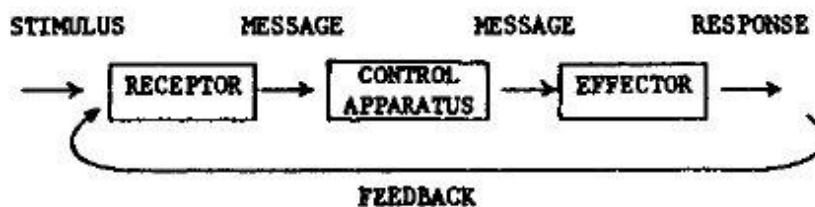


Figure 1: Simple Feedback System¹

What is called “Bergsonian Time” is an important concept in cybernetics and basically describes Henri Bergson’s “philosophy of flux.”² Artists such as Roy Ascott experimented with these ideas of duration (*durée*) and interaction, inspired by Norbert Wiener’s *cybernetics* in which this duration was an integral part. The American mathematician used the term feedback to describe loops which “govern present and future actions according to a past set of meanings.”³

¹ Ludwig von Bertalanffy, *General System Theory: Foundations, Development, Applications* (New York: George Braziller, 1969), 162.

² Bruce Clarke and Linda Dalrymple Henderson, “Introduction: Part Two” in *From Energy to Information*, Bruce Clarke and Linda Dalrymple, ed. (Stanford, MA: Stanford UP, 2002), 97.

³ David Tomas, “Feedback and Cybernetics: Reimagining the Body in the Age of Cybernetics,” in *Cyberspace, Cyberbodies, Cyberpunk*, ed. Mike Featherstone and Roger Burrows (London: SAGE Publications, 1995), 28.

Space: There is a dynamic notion of space in cybernetic literature and art.

Example: William Burroughs, *Nova Express* – Time and space are constructed and controlled by the power of the word. Burroughs tries to undermine the system language, to inoculate himself against “the word that begets image and image *is* virus.”

Users: Every interaction and communication in cybernetics is defined by feedback that “[governs] present and future actions according to a past set of meanings.”

Example: Cedric Price, *The Fun Palace* – “But the essence of the place will be its informality: nothing is obligatory, anything goes. There will be no permanent structures. Nothing is to last for more than ten years, some things not even ten days [...]”⁴

Functions: Cybernetic environments are defined by their human functions.

Example: Marshall McLuhan, *Understanding Media* – “[...] the ‘message’ of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs. [...] it [the railway] accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of work and leisure.”⁵

Important Terms

Cybernetics	(gr. κυβερνήτης: steersman) The interdisciplinary field of control and communication theory
Homeostasis	A self-regulating system; refers to the regulation of the inner environment
Feedback	The property of being able to adjust future conduct by past performance; refers to the relationship between inner and outer environment
Entropy	The measure of disorganization in a system
Cut-Up Method	Writing technique; different texts are “cut-up” and rearranged to form a new meaning

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Wiener, Norbert. 1948. *Cybernetics: or Control and Communication in the Animal and the Machine*. Cambridge, MA: The MIT Press, 1965.

⁴ Price, Cedric, and Joan Littlewood, “The Fun Palace,” *The Drama Review: TDR* 12, No.3 (1968): 130.

⁵ McLuhan, Marshall, *Understanding Media* (New York: McGraw-Hill Book Company, 1965), 8.