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What is 'cyberspace'?

Vassilys Fourkas

The term 'cyberspace' was first coined by William Gibson in his 1982 short story 'Burning Chrome' to refer to a computer generated virtual reality. However, the term became popular in 1984, after its use in Gibson's novel Neuromancer. Etymologically, cyberspace is a compound word and the origin of the first term 'cyber' comes from the Greek word kybernetes, which means pilot, governor, and ruler. The root 'cyber' is also related to 'cyborg', a term that describes a human-machine synthesis resulted by connecting the human body in advanced high-tech devices.

According to Gibson, cyberspace is the name of a real non-space world, which is characterised by the ability for virtual presence of, and interaction between, people through 'icons, waypoints and artificial realities'. The Gibsonian cyberspace is an urban 'thin' space (Kneale, 1999), dealing with urban experiences and problems such as crime, social exclusion and poverty. It mirrors socio-economic conflicts and geographical divisions that occur in enormously enlarged and highly polarised cities, in which speed and movements over the virtual world of cyberspace are the key metaphors for new spatial experiences. Gibson himself recognises that, by his imaginative stories, he did not predict the widespread use of computer networks like Internet around the globe, but he simply used actual technological developments to make sense of the imagined and futuristic worlds described in his novels (Gibson, 1996).

But cyberspace no longer strictly refers to the fictional 'matrix' in William Gibson's novels; it is not science fiction but rather a science fact. It has now entered into common speech on and off the Internet, as shorthand for the conception of computer networks as a virtual space. Instead of the human-parts metaphors (brains, memories etc.) that were basically used to describe the first appearance of computers, the literary term cyberspace is used as a virtual place-metaphor to describe and understand the function of ICTs networks. 'One doesn't "go" somewhere when picking up the telephone. But when the computer couples with these same telephone lines, suddenly spatial and kinetic metaphors begin to proliferate' (Nunes, 1995: 1).

According to Vinton Cerf, one of the inventors of Internet, the 'information superhighway' metaphor has very little ability to explain either where the Internet arose or where it could go (Cerf, Forward, in Stefik, 1997). Stefik says that politicians, especially the American ones, use the highway metaphor in their rhetoric in an attempt to persuade people that large-scale investments on the Internet will, similar to a highway system, benefit the common good. Stefik, instead, teases out four other metaphors from current discourse about the Internet: First, the digital library metaphor shows up in digital libraries, databases and other archival information services. It emphasises the publishing and storage of collected knowledge for preservation and access by a society. Second, the electronic mail metaphor shows up the Internet as a communications system. Third, the electronic market metaphor is used for thinking about issues of digital commerce, digital money, and digital property. Finally, the digital worlds metaphor shows up in description of geographical and social settings and navigations on the network, groupware and multi-user virtual environments, augmented reality, telepresence, and ubiquitous computing (Stefik, 1997: xx-xxi).

Indeed, the development of Internet/ Web technologies have formed a virtual space that is based on the operational integration of the above spatial metaphors and which is concerned with information, communication and various types of interaction, as well as the diversity of personal interests and values. It is able to embrace and integrate many forms of human activities that are related to real places and physical proximity/movement (i.e. online shopping and banking). 'But the price to pay for inclusion in the system is to adapt to its logic, to its language, to its points of entry, to its encoding' (Castells, 1996: 374). Thus, through the powerful influence of the Internet as a new communication system mediated by social interests, government policies, and business strategies, a new culture is emerging: the culture of real virtuality (Castells, 1996: 461). He further explains that:

'it is real virtuality, and not virtual reality, because when our symbolic environment is, by and large, structured in this inclusive, flexible, diversified hypertext, in which

we navigate every day, the virtuality of this text is in fact our reality, the symbols from which we live and communicate' (Castells, 1997:10-11).

On the other hand, places/spaces are not static objects, but rather dynamic systems of connections where the external sphere (society and space) acts upon the internal sphere (self and mind) and vice versa. Regarding the spatial conception of cyberspace, therefore, the significance of the bi-pole place-metaphor/real virtuality is interrelated to the fact that our 'internal sphere' is making use of the network topology of virtual places. Cyberspace could then be notionally linked either to the Platonic definition of space as the totality of geometric relations possible, or to the Aristotle's more topological definition of space as the generalized sum and place of all (virtual, in our case) places. It might be also argued that computer networking provides, more than even before, a selective setting for the extension of 'cognitive space', thus of the space which is constructed intellectually, and delineates our knowledge of others (Adams, 1998:102-3).

Based on the above, I would argue that spatiality of cyberspace is defined around its interrelation to real (physical) space (see Batty, 1997). The spatial embodiment of cyberspace can be described as having at least three layers: the technical, which is concerned with the technological infrastructure of cyberspace; the geographical, thus the topology of ICTs networks formed by the location of their nodes and hubs; third is the social layer, which is concerned with the spatial organisation of people using the ICTs networks. Cyberspace is a spatial system; its network topology is certainly dependent upon spatial fixity; its development is critically

influenced by the geography of economic and technological development.
Having said that, we should approach it not by treating it as an artefact but as a serious ontological challenge to modern spatial studies. The maintenance of geography and its characteristics (people, space, time) are considered important means to draw conclusions regarding the basic features of cyberspace's spatial conception and embodiment in contemporary society.

References

Adams, C. P. (1998): Network Topologies and Virtual Places, Annals of the Association of American Geographers, Vol. 88, No 1, pp. 88-106.
Batty, M. (1997): Virtual Geography, Futures, Vol. 29, No 4/5, May/June1997, pp. 337-352.
Castells, M. (1996): The Rise of Network Society, Blackwells: Oxford.
Castells, M. (1997): An Introduction to the Information Age, CITY, 7, pp. 6-16: introductory speech to the Conference on 'Information and the City', organised by the CITY journal and held at the School of Geography, Oxford University, on 22nd of March 1997.
Gibson, W. (1996): Civilisation and the Edge of Popular Culture, an interview to Bob Catterall; CITY, 5-6, pp: 174-177.
Kneale, J. (1999): The Virtual Realities of Technology and Fiction: Reading William Gibson's Cyberspace, in Crang, M. et al (eds.): Virtual Geographies: Bodies, Space and Relations, pp. 205-221; Routledge: London.
Nunes, M. (1995): Baudrillard in Cyberspace: Internet, Virtuality, and Postmodernity, Style 29, pp. 314-327.
Stefik, M. (ed.), (1997): Internet Dreams: Archetypes, Myths, and Metaphors, MIT Press: Cambridge, Massachusetts, London.

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