Douglas Kellner

Virilio on Vision Machines

Paul Virilio
Open Sky
Translated by Julie Rose
London: Verso, 1997 [1995]
ISBN: 185984-181-3
152 pp.

Paul Virilio opens *Open Sky* with a description of the blue sky above us as 'the optical layer of the atmosphere, the great lens of the terrestrial globe, its brilliant retina' (1). Then, more poetically and philosophically:

From ultra-marine, beyond the sea, to ultra-sky, the horizon divides opacity from transparency. It is just one small step from earth-matter to space-light -- a leap or a take-off able to free us for a moment from gravity. (1)

I open my review with these quotes to signify the highly elusive form of Virilio's writing, his significant use of science discourse and metaphors, his intense focus on vision, and his grounding of his work in phenomenology, in concrete analysis of the relation of the body and senses to its lived environment. Virilio's latest series of texts, including *War and Cinema* (1989 [1984]), *The Vision Machine* (1994 [1988]), *Polar Inertia* (1998b [1998], *The Art of the Motor* (1995c [1993]), and *Open Sky* all interrogate the logistics of perception, and in particular the transformation of perception and culture under the impact of new technologies of representation and information. In the following review of *Open Sky*, I focus on his analysis of the impact of technology on cultural representation, perception, and the constitution of the contemporary era. I introduce this work, however, with some contextualizing comments on some of Virilio's other writings on this topic, focusing on cinema and representation and the ways that what he calls 'vision machines' play a significant role in the constitution of contemporary culture and experience.

War, Cinema, and Representation

In *War and Cinema*, Virilio interrogated the relation between war, speed, technology, and the means of representation, particularly vision machines and the logistics of perception embodied in cinema, computers, and new virtual reality machines. War, Virilio suggests, has long been dependent on the logistics of representation, on providing accurate representations of the enemy's troop and weapon deployment. As military surveillance progressed, cinematic representation became more salient to military strategy, although, more recently, informatics, computer simulation, and satellite imaging has become more central.

From approximately 1904, accelerating in the First World War, and until the recent high tech explosion, the apparatus of cinema was deployed as part of military strategy, involving lighting the terrain of battle and enemy forces, accurately representing their strength and movement, and instantaneously perceiving the actual battlefield itself as a dynamic field of motion, all of which was crucial to military strategy. Cinema too followed a certain military logic with great directors serving as dictators and authoritarian orchestrators of cinematic spectacle, leading Virilio to conclude that: 'War is cinema, and cinema is war' (1989: 26).

Cinema has long been part of Virilio's imaginary, and his reflections on cinema and war cover a vast expanse of modern history, providing a unique take on the history of cinema and the ways that modes of cinematic representation are also crucial to war and society. Virilio's theme is the progressive dematerialization of warfare in high tech and virtual war, in which technologies progressively replace human beings:

'What the video artist Nam June Paik calls the triumph of the electronic image over universal gravity has carried this [dematerialization] still further. The sense of weightlessness and suspension of ordinary sensations indicates the growing confusion between 'ocular reality' and its instantaneous, mediated representation. The intensity of automatic weaponry and the new capacities of photographic equipment combine to project a final image of the world, a world in the throes of dematerialization and eventual total disintegration, one in which the cinema of the Lumiere brothers becomes more reliable than Junger's melancholy look-out who can no longer believe his eyes.' (1989: 73)

This passage refers to the tendency of technology to displace modes of human perception and representation in military planning and execution, as computer programs replace military planners, and computer simulations replace charts and maps of the territory. On the level of the battlefield itself, human power is replaced by machines, reducing the soldier to a cog in a servomechanism. Virilio comments:

'The disintegration of the warrior's personality is at a very advanced stage. Looking up, he sees the digital display (opto-electronic or holographic) of the windscreen collimator; looking down, the radar screen, the onboard computer, the radio and the video screen, which enables him to follow the terrain with its four or five simultaneous targets; and to monitor his self-navigating Sidewinder missiles fitted with a camera of infra-red guidance system.' (1989: 84)

New Modes of Perception and Representation

In the shift from cinema to computer and new technologies of representation in the evolution of what Virilio calls 'vision machines', cinema plays a less central role in his

analysis, though its functions are taken over by video, computers, and new modes of virtual reality and multimedia technologies that provide both information and entertainment; both a representation of the real and new fantasy image worlds (often difficult, as Baudrillard warns, to tell apart). Thus, there is less focus on cinema in *Open Sky* than some of his earlier books, although his analysis is highly relevant to helping us understand cinema and contemporary modes of representation.

In *Open Sky* and many interviews and articles of the 1990s, Virilio interrogates the new information technology. His central insight is that new information, communication, and transportation technologies are taking us out of this world, beyond the limits of space and time, outside of nature and the material world into a new dimension with its own temporality, spatiality, and modes of being. Virilio fears that this journey will take us out of our bodies, minds, nature, and world as we have experienced and known them, and into a terrifying new sphere that will cause disastrous, possibly fatal, mutations of mind, body, and experience.

Throughout the book Virilio describes the shift from the transportation revolution to a communications revolution. The 19th century transformation revolution constructed the infrastructure of modernity with its roads, canals, ports, cities, railroads, airports, and its maps, calendars, and clocks. This social structure was organized around graphic representations of space and time, in which acceleration and deceleration, the measurement and organization of speed, constituted a 'transmission revolution' (12) with its measured and mapped extension, duration, and vectors of mechanical motion.

In today's communication revolution Virilio claims that theories of light and speed are replacing time and space, as a new immateriality and 'new illuminism' comes to dominate contemporary scientific thinking. Virilio believes that, as with the notions of critical mass or temperature, when states of affairs break up and become radically other, space too becomes 'critical' (9 ff.). The notion of 'critical space' refers to the breaking up and dissolution of previous configurations of space under the impact of technology. For Virilio, telecommunication that eradicates all duration and extension of time in the transmission of messages and images, as well as interactive computer technologies that decenter urban or lived space, all constitute threats and dissolutions of previous configurations of experience as space becomes virtual and takes on new modalities. Previous configurations of space and time are replaced by time-light (i.e. the time of the speed of light) and a new 'lumiocentrism' (5 f. and 14 f.), in which the instantaneous flow of information ruptures previous configurations of time and space, requiring new concepts to describe the parameters and processes of the emergent worlds of technology and technological experience.

Virilio argues that developments in science and technology are thus obliterating both modern and common sense views of the world, and producing new objects and spaces that cannot be explained by modern conceptual schemes. The 'physics of the infinitesimally small' and the cosmological speculations on outer space produce novelties and puzzles that put in question the facts of perception and the realm of experience, while pointing to novel, unperceived, and imperceptible entities, which

confound common sense and current scientific schemes. Moreover, new technologies are producing both new objects (i.e. cyberspace, virtual reality, etc.) and new modes of perception and representation (i.e. fractal geometry, chaos and complexity theory, computer-generated representations of external and internal realities, etc.) that themselves require new modes of thought and cognition. Such shifts in modes of perception and representation began with cinematic photography that captured motion and phenomena not visible to the naked eye, increased with developments in microscopes and telescopes, and proliferated new modes of perception and representation with computers and new virtual technology.

In short, Virilio is mourning the loss of the object of ocular perception in the emergent forms of technological vision and representation, the displacement of the dimension of direct observation and common sense, and thus the loss of the materiality and concreteness of the objects of perception, constituting the realm of appearance and lived experience. In other words, Virilio mourns the loss of the phenomenological dimension that privileged lived experience. Always a phenomenologist, Virilio roots his thought in concrete experience of objects, people, and processes in the observed and experienced worlds of everyday life and the natural and social worlds. The new technological worlds, for him, constitute a break and rupture with ordinary experience and thus shift the locus of truth, meaning, and validity to, for Virilio, an abstract and enigmatic virtual realm.

For Virilio, the body is a planet, a unique center around which objects gravitate, and he criticizes an increasing derealization of the body in cyberspace and virtual technologies. He is thus very much a materialist humanist and phenomenologist who is disturbed by the invasion of the human body by technology and the substitution of the technological for the human and lived experience. His project is to describe the losses, the disappearances, of the substitution, describing how technology displaces human faculties and experience, subjecting individuals to ever more powerful modes of technological domination and control.

In Virilio's optic, the astronauts are harbingers of a new experience beyond the familiar space and time coordinates of material existence. Shot into outer space beyond the laws of gravity and earth's spatial and temporal coordinates, the astronauts found themselves in a no place and no time continuum without fixed coordinates or dimensions. In this new dimension, some experienced a vertigo of intense disorientation and collapsed into madness after their return, or into strange metaphysical musings. Virilio's comments here, however, are somewhat anecdotal and serve more as metaphorical and rhetorical devices to dramatize the strangeness of outer space travel and the displacement of our scientific and conceptual schemes in this new dimension than a serious scrutiny of the effects of space flight on human beings.

Cyberspace, Virilio claims, supplies another space without the usual space-time coordinates that generates a disorienting and disembodying form of experience in which communication and interaction takes place instantaneously in a new global

time, overcoming boundaries of time and space. It is a disembodied space with no fixed coordinates in which one loses anchorage in one's body, nature, and social community. It is thus for Virilio a dematerialized and abstract realm in which cybernauts can become lost in space and divorced from their bodies and social world.

In addition, Virilio analyzes and denounces what he calls 'a pernicious industrialization of vision' (89) and what he fears is a displacement of vision by machines. Virilio is afraid that vision machines are increasingly seeing for us, ranging from cameras to video to satellite surveillance to nanotechnology which probes the body (and next, the mind?). He fears that media like cinema and television train and constrain vision, leading to degradation of vision and experience: 'If, according to Kafka, cinema means pulling a uniform over your eyes, television means pulling on a straitjacket, stepping up an eye training regime that leads to eye disease, just as the acoustic intensity of the walkman ends in irreversible lesions in the inner ear.' (97)

But even more, he fears that the 'standardization of vision, denounced by Kafka' will 'make way for a sort of **electro-ergonomic suppressant**, in which design of the pathways of waves and their sequential aesthetic will replace the movie theatre for the viewer armed with an audiovisual helmet that relays the eyeball's **mise en scene**, the optic nerve irradiated by laser beams reproducing on the screen of the occipital cortex that fine line of light once produced by the old movie projector' (94). In other words, he fears that substitution of audiovisual helmets in virtual reality devices will replace the previous emphasis on natural sight, creating a new technological aesthetic and a new mechanization of sight: 'There is no need to look for any further for the reasons for the decline of the film industry: following on from the innovation of the earlier vision machines of photography, film or video, we are already seeing the beginnings of a true 'mechanization of perception', whereby the intrusion of optoelectronic devices right inside the nervous system partly explains the abandonment of projection rooms which have also become smaller and smaller' (94-95).

Moreover, Virilio fears that we are increasingly subjected to bombardment by images and information and thus by 'a discreet pollution of our vision of the world through the sundry tools of communication' (96). He also fears that a technological accident will be catastrophic and bring about a technological apocalypse (17, 69 f., 130 f.). For Virilio, every technological system contains its specific form of accident: with the invention of the ship, you get the shipwreck; the plane brings on plane crashes; the automobile, car accidents, and so on. For Virilio, the technocratic vision is thus one-sided and flawed in that it postulates a perfect technological system, a seamless cybernetic realm of instrumentality and control in which all processes are determined by and follow technological laws. In the real world, however, accidents are part and parcel of technological systems, they expose its limitations, they subvert idealistic visions of technology. Accidents are consequently, in Virilio's view, an integral part of all modes of transportation, industrial production, war and military organization, and other technological systems.

Throughout the 1970s and 1980s, Virilio constantly evoked the spectre of a nuclear accident, an event that would literarily mean the end of the world. In the past decade, Virilio continually argues that the information superhighway is just waiting for a major accident to happen, which will be a new kind of global accident, effecting the whole globe. He sees the stock market crash of October 1987 as the harbinger of a major technological accident, causing a crash of the whole system and of the global economy. He speaks regularly of an 'information bomb' that is set to explode, evoking the spectre of 'a choking of the senses, a loss of control of reason of sorts' in a flood of information and attendant disinformation (96, 118).

Virilio also sees the new technologies as obliterating the real, taking us out of the world, an 'accident' that would destroy reality itself, substituting a virtual world for the real one. Shrilly technophobic and somewhat hysterical, Virilio thus demonizes modern information and communication technologies, suggesting that they are doing irreparable damage to the human being. Sometimes over-the-top rhetorical, Virilio is a postmodern Jeriamiah, warning us of the dangers of technology out of control, of technologies obliterating the real, displacing human beings and human capacities, throwing us in a grave new world that we are not ready for and that could seriously harm us.

Concluding Remarks

We must take hold of the riddle of technology and lay it on the table as the ancient philosophers and scientists put the riddle of Nature out in the open, the two being superimposed. (Paul Virilio)

Hence, in recent work, Virilio describes the effects of new technologies in terms of an explosion of information as lethal as a nuclear explosion and warns of the ubiquity of new types of accident that will require new modes of deterrence and dissuasion. He also envisages progressive derealization and dematerialization of human beings in the realm of virtual reality which may come to rule every realm of life from war to sex. From this perspective, technology emerges as the major problem and threat of the contemporary era, as a demonic force that threatens to erase the human. Much as his predecessors Heidegger and Ellul, Virilio warns of the totalitarian threat in technology and calls for a critical discourse on technology, recognition of its possible harmful effects, and regulation of technological development, subjecting technology to human and political control.

Yet Virilio has never really unravelled what he calls 'the riddle of technology', which would require an interrogation of its fascination, power, and complexity, and not just its negativity. Virilio criticizes the discourses of technophilia, that would celebrate technology as salvation, that are totally positive without critical reservations, but he himself is equally one-sided, developing a highly technophobic and hypercritical discourse that fails to articulate any positive aspects or uses for new technologies, claiming that critical discourses like his own are necessary to counter the overly

optimistic and positive discourses. In a sense, this is true and justifies Virilio's predominantly negative discourse, but raises questions concerning the adequacy of Virilio's perspectives on technology as a whole and the extent to which his work is of use in theorizing the new technologies with their momentous and dramatic transformation of every aspect of our social and everyday life.

Part of the problem with Virilio's writing in *Open Sky* and all of his major texts is that they are highly disjointed and elusive. He throws out in scattergun fashion fascinating ideas and some illustrations, substituting a highly evocative and rhetorical mode of writing for systematic theoretical analysis and critique. His style is extremely dromoscopic -- running and leaping from topic to topic with alacrity, juxtaposing defuse elements and themes, proliferating images, quotes, and ideas which rapidly follow each other, often overwhelming the reader and making it difficult to grasp the thrust of his argument. His work is fragmentary and disruptive, deploying collage methods of assembling pieces of quotes, examples, and analysis, while quickly moving from one topic to another.

To some extent, Virilio exemplifies Walter Benjamin's method of illuminations and fragments, which creates constellations of ideas and images to illuminate specific phenomena and events. Like Benjamin, Virilio circles his prey with images, quotes, often startling and original ideas, and then quickly moves on to his next topic. Virilio believes in the virtue of breaks and interruptions, of gaps and absences, eschewing systematic theorizing. But although he pursues some of the same themes as Benjamin, deploys a similar method, and cites him frequently, there are major differences. Whereas Benjamin, in the spirit of Brecht, wanted to 'refunction' new technologies to make them instruments of progressive social change and to develop political strategies to exploit the potentially progressive features of new technologies, Virilio is relentlessly critical, eschews developing a technopolitics, and nowhere speaks of using or refunctioning technology to serve positive ends.

Thus, Virilio is highly one-sided and does not develop a dialectical conception of technology or a progressive technopolitics. So far, Virilio has produced no master oeuvre that will pull together his ideas and perspectives, that will provide a synthetic vision. As a critical philosopher, Virilio is quite ascetic, never articulating the normative position from which he carries on such a sustained and ferocious critique of technology. He seems to assume something like a religious humanism, that human beings are significant by virtue of their capacity for speech, reason, morality, political deliberation and participation, and creative and spiritual activity, while technology is seen as undermining these human capacities, taking over human functions and rendering humans subservient to technological rationality. But Virilio himself does not adequately articulate the humanist or religious dimension of his critique and, as noted, describes himself as a materialist and abstains from developing the normative perspective from which he carries out his critique.

On the whole, Virilio's critique of technology has echoes of Heidegger's and Ellul's complaints concerning the totalitarian ethos of technology, the ways that its

instruments and instrumentality dominate human beings and create a novel world in which things and objects increasingly come to rule human beings. To the extent that Virilio's works illuminate the great transformation that we are currently undergoing and warn us of its dangers (too often ignored by the boosters and digiterati of the new technologies), he provides a useful antidote to the uncritical celebrations of the coming computopia. But to the extent that he fails to provide critical perspectives which delineate how new technologies can be used for democratization, human empowerment, and to create a better world, he remains a one-sided critic rather than a philosopher of technology who grasps the full range, effects, and possibilities of the technology adventure that we are currently undergoing.

University of California, Los Angeles, USA

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