Article

New Media, The Information Bomb, and The Overexposed City: Paul Virilio contra Bernard Stiegler on Technology, Space, and Time

Media Theory
Vol. 6 | No. 1 | 01-20

http://mediatheoryjournal.org/

JOHN ARMITAGE

Winchester School of Art, University of Southampton, UK

Abstract

New media, defined by the internet and other postindustrial forms of telecommunication, is one of the best-known and most wide-ranging contemporary cultural and critical concepts. This article provides an accessible introduction to the French critic of the art of technology Paul Virilio's writings on the new media of what Virilio calls 'the information bomb' and 'the overexposed city'. Steering the reader through this crucial thinker's often challenging work, the article considers Virilio's ongoing impact on present-day critical new media theory by contrasting it with that of the French philosopher Bernard Stiegler. With extensive discussion of Virilio's and Stiegler's very different technological and spatial viewpoints and careful appreciation for questions concerning contemporary temporality, the article guides the reader through part of the electronic labyrinth that is new media.

Keywords

New media, information bomb, overexposed city, Paul Virilio, Bernard Stiegler, technology, space, time

Introduction

In an essay from 1984 (1991: 9-27) entitled 'The Overexposed City', the late French critic of the art of technology Paul Virilio focuses his attention on the potential of contemporary new media to challenge established beliefs about the representation and reality of the city.

New media has two senses in Virilio's philosophy. The literal, restricted sense is that new media are recently developed forms and techniques of production. More generally, though, new media refers to the whole process of such production and systems: those systems of video, DVD, and computer-generated imaging, along with the techniques and conventions used in their application as expressive devices. New media as a particular discipline of media enquiry emerged during the 1960s with the work of multimedia artists such as Nam June Paik (Rush, 2005: 53). Since then, new media has formed a key part of the work of many artists, including Jeffrey Shaw, whose *The Legible City* (1991-ongoing) is discussed below, and which provides one of the most influential early examples of what a computer-generated city might look like (Rush, 2005: 234). Hence, in the specifically media-based and the more general sense of terms like the computer-generated city, and Shaw's use of computer graphic 3D animation systems, his focus, as his title suggests, is on new media and the city. In debates around contemporary technology and aesthetics, new media can be used in the restrictive sense of Virilio's philosophy of media and in the general sense of an account of technological production systems.

What makes 'The Overexposed City' crucial to understanding Virilio's thought is that its focus on new media produces an account of the overexposed city that is more nuanced and complex than that he presents elsewhere. This article will lay out Virilio's argument in this important essay, elucidate the developments in his thinking about the overexposed city, and introduce an informational, communicative, and technological category that he begins to develop there and returns to constantly in his later work. This category is *The Information Bomb* (2000). I will explain and discuss the information bomb in more detail later in the article, but first it is useful to set the context for Virilio's employment of it by examining the key arguments of the essay.

'The Overexposed City' discusses the position and assimilation of new media in the contemporary culture of the city. Virilio argues that the city has entered what he calls a moment of 'obligatory introversion' (1991: 10) as experiments with cameras, closed-circuit television, and computers introduce an immanent new perspective that is devoid of horizon and which changes the traditional concepts of the 'boundary' and the 'surface' (1991: 12).

The term 'boundary-surface', taken by Virilio from architecture, literally refers to the palisade and the screen, stone ramparts, and the computer interface. Experiments with new media, argues Virilio, deprive us of objective boundaries as the architectonic element begins to drift and float in electronic ether, devoid of spatial dimensions, but inscribed in the singular temporality of an instantaneous diffusion. For Virilio, new media leads the way in generating and presenting newly ominous ideas and dark possibilities for the culture and sociality of the city. As a French architect and critic of the art of technology, Virilio, at least in 1984, was writing a kind of manifesto that explained the aims of what I shall call 'the computerized boundary-surface'; a computerized boundary-surface Virilio describes as one where, from here on, people can no longer be separated by physical obstacles or temporal distances. What Virilio is trying to capture are some of the typical features of the computerized boundary-surface, as in his statement in 'The Overexposed City' that with the

> interfacing of computer terminals and video monitors, distinctions of *here* and *there* no longer mean anything … This sudden reversion of boundaries and oppositions introduces into everyday, common space an element, which until now was reserved for the world of microscopes. There is no *plenum*; space is not filled with matter (Virilio, 1991: 13: original emphases).

It is this idea of distinctions of here and there no longer meaning anything, as well as the sense of the escalation of established ideas of the world, that Virilio notices and investigates in his writing on the overexposed city.

Throughout his career, Virilio was a champion of maintaining the boundary between the 'here' of the human body and the 'there' of the surfaces of new media. See, for example, his work on *Polar Inertia* (Virilio, 2000), *The Art of the Motor* (Virilio, 1995), or *Open Sky* (Virilio, 1997), and his discussion of the overexposed city in 'The Overexposed City' is based upon a defence of the continuing importance of corporeal boundaries as against experiments with the surfaces of new media.

Yet we might begin considering Virilio's essay by contrasting its series of criticisms with those recently launched in favour of what he would consider an unbounded computerized expanse, which appears in the false perspective of the machines' luminous emissions, and which might focus most decisively on the late French critic

Bernard Stiegler's analysis of new media or 'telecracy' in the essay entitled 'Telecracy Against Democracy' (2009: 171-180). Stiegler's inadvertent opposition to Virilio is worth expanding on here as the differences between their arguments make the position that each holds and the alternatives of 'telecratic' and 'overexposed' approaches to new media easier to understand.

In 'Telecracy Against Democracy', Stiegler shares Virilio's belief in the intensification of culture under contemporary technology, but his analysis of its relation to new media could not be more different. This divergence between the two writers is not intentional or an esoteric and academic dispute about the nature of the boundaries and surfaces of new media. Nor is it simply a fashionable spat about which aspects of the contemporary new media scene are good or bad. Rather, for Stiegler and Virilio, new media has the potential to generate aesthetic reactions, and to reveal the dehumanizing impact of our media-oriented culture. In other words, their respective ideas of the place and role of new media rest on particular assumptions about media and technology, and point towards different modes of thinking about aesthetics, individuality, and culture.

Bernard Stiegler's 'Telecracy Against Democracy'

Stiegler argues that under the influence of contemporary technology the rights and duties of the urban citizen have become problematic, by which he means that developments in media are assimilated for their accelerated 'real-time' and 'live' visual effect on the human body rather than their potential to improve cultural competences and citizenship. Or, in other words, that photographic, cinematic, and related televisual communications have become the just-in-time adjustment of politics to public opinion and take little notice of the effect these communication systems might have on urban citizens' lives. The result of this, according to Stiegler, is that everyday urban citizenship has split off from the various expert cultures of opinion (such as photography, cinema, television, and new media art) as the mediated cultures of appearance and disappearance absorb the public, which, consequently, becomes a mere audience. It is precisely this, says Stiegler, which characterizes 'telecracy' since laypersons can no longer understand or take part in these urban, political, and cultural spheres and organizations that crucially affect their whole existence.

Stiegler argues that people should struggle against this intensified manipulation of cultural life. For him, the way in which this can best be achieved is by re-conceiving the notion of digital technologies as a means of enormous potential to counteract precisely that telecracy that makes up our culture and to reconstruct a democratic industrial society. It is in this sense that, for Stiegler, telecracy is against democracy: universal digital technologization is possible but has not been fully achieved, and people should continue to strive to realize its potential for entirely novel forms of associative organization. To this end, Stiegler develops a theory of 'sociation', a democratic notion that aims to recreate a social body where all urban citizens can mobilize freely and equally and assume their responsibilities. Sociation thus has the avowed aim of actualizing the potential of digital technologies by means of putting the scientific logics of the machine and the cultures of mediated appearance and disappearance at the heart of a radically new politico-industrial project; a project that would eventually govern conduct in the world. For Stiegler, the basis of mobilization is not the currently predominant techniques of political marketing but rather the ability of society to produce a new industrial model. He argues that sociation rests on the possibilities latent within digital technologies and urban citizens, which, he claims, we can sense is made possible and necessary by technological development. Hence, the aim of Stiegler's theory is to set up the conditions where genuine sociation can take place.

'Telecracy Against Democracy' is a polemically written essay, which ends with an attack on 'generalized irresponsibility' and on those thinkers (Virilio is not included), who, for one reason or another, celebrate the intensification of modern life. Stiegler names them as 'hegemonic' service companies, marketers, and politicians: as 'thinkers' who have turned their backs upon the idea of re-conceiving of digital technologies linked to the narratives of telecracy. One of the key areas of 'hegemonic' thought that he criticizes is its account of new media. According to Stiegler, the development of new media must be thought of as a part of the overall project of democratizing digital technologies. Indeed, its role of helping urban citizens to understand and act in the world around them should be recaptured from the expert companies and political marketers whose discussions of new media are incomprehensible to those who do not share their level of specialist education in 'disassociation' and 'symbolic techniques'.

For Stiegler, democracy marks the quintessence of digital technologies and new media. He argues that in all societies the boundaries and surfaces of the symbolic are constituted by exchanges, which it is possible, by means of certain symbolic techniques (magical rites, religious worship, writing, etc.), to oversee, thus establishing what he calls social control, which offers new ways of acting by forging new links with the past to redefine contemporary culture. However, he argues that these democratic attempts have been overcome by, and failed in the face of, a new hegemony (of which the overexposed city is one key aspect) which seeks to impose new techniques of disassociation on new media, culture, and society. With this view of the state of new media in mind, Stiegler describes what he sees its political potential to be:

> In so far as they essentially set telecommunications systems in motion (tele-graphy, tele-phony, radio/tele-diffusion, television, networks of networks etc.), today's technologies are, as organs of power – as tele-*cracy* – what threatens demo-*cracy* and undermines it from within. But, insofar as they constitute technologies for relating between the two terms linked by a *telos*, that is to say, a *finality* (a motive, a desire), these tele-technologies are also the only possible way to invent new forms of social bond and civil peace (Stiegler, 2009: 177; original emphases).

What he means by this is that new media telecommunications systems, when they are rescued from the expert spheres of everything from telegraphy to television networks, become a means by which urban citizens can perceive their technocultural and socio-political position, and articulate their technological needs and political desires. In other words, what is important about new media is not its technological impact, but rather how particular democratic impulses can be put to use by urban citizens to gain a greater understanding of their technocultural position and the social opportunities open to them.

Perhaps Stiegler's most straightforward illustrations of this process of appropriation of tele-technologies to shed light on new forms of social bond and civil peace can be found in his dramatic call for democrats to show the reality of their attachment to democracy. In 'Telecracy Against Democracy', for example, Stiegler wants to persuade the reader that society must take itself in hand to discover whether it wants to become 'associated', or, in other words to organize itself differently. Rejecting telecratic inertia

and a lack of democratic assertiveness, Stiegler argues that society must organize itself as a movement: it must set about confronting the threat that faces it – namely, an unprecedented political and social collapse. A slightly different example can be found in Stiegler's plea in 'Telecracy Against Democracy' to, above all, 'take action'. Here, Stiegler is not advocating destructive, furious, suicidal, or vengeful action, but action that is thought-out, collectively conceived, debated, and deliberated, and with a view to overcoming the very great difficulties of the age. Stiegler, through rehearsing and performing this polemic, is then linking it with his own position as an urban citizen; he is taking himself in hand, and therefore generating a sense of self-identity or individuality as an urban citizen. In both of these cases it little matters whether taking society or ourselves in hand involves new media: what is important is the impact that the call for democrats to show the reality of their attachment to democracy has on the social structure, aesthetics, and politics of the cultural world in which it occurs. Both of Stiegler's calls to take ourselves in hand set up a social body in which it becomes possible to find a way to represent and circumvent our increasingly asocial needs and our alternative social aspirations, to generate a sense of association, and to strive for responsibility for our own ways of life. For Stiegler, this is the aim of new media: to anticipate in technological form the possibility of mobilized sociation taking place, and to create a social body in which ideas of responsibility and urban citizenship can be explored.

From 'The Legible City' to The Overexposed City

In contrast to 'Telecracy Against Democracy', Virilio argues that what thinkers like Stiegler require from the experience of new media is that it form a bridge over the gap separating the discourses of 'electronic topology' and aesthetics, thus opening the way for a unity of urban experience regarding 'the framing of perspective and the gridwork weft of numerical images' (1991: 13). In effect, Virilio accuses critics such as Stiegler of attempting to counteract the enormous potential of telecracy, electronics, and aesthetics through new media's 'sociation' in a way that modern art and social theory have, through their continual efforts to do the same thing over the past few hundred years, shown to be impossible. The difficulty of Stiegler's call to counteraction is quite apparent if we take as an illustrative example the work of the twenty-first century Australian new media artist, Jeffrey Shaw (1944-).

Shaw is vitally important for discussions of the modern or perhaps 'underexposed' city and the overexposed city, and is a crucial influence on the development of new media art, if not necessarily on Virilio's own work. In his three versions of *The Legible City* (of Manhattan, 1989, Amsterdam, 1990, and Karlsruhe, 1991-ongoing), Shaw's computer graphic art installation with Dirk Groeneveld (collection of the ZKM-Medienmuseum, Karlsruhe, Germany) allows the visitor to ride a motionless bicycle through a simulated representation of a city that is comprised of computer-generated three-dimensional letters that form words and sentences alongside the edges of the streets.

All three versions of *The Legible City* use the ground plans of real cities: Manhattan, Amsterdam, and Karlsruhe. However, the current architecture of these cities is substituted by textual creations and configurations written and assembled by Groeneveld. Voyaging through these cities of words is therefore a voyage of reading; selecting the path the visitor takes is a selection of texts on top of their impulsive juxtapositions and combinations of meaning. The handlebars and pedals of the bicycle interface give the viewer interactive control over direction and speed of travel. The bodily exertion of cycling in the real world is unnecessarily transferred into the virtual environment, affirming a combination of the energetic and dynamic body in the virtual realm. A video projector is used to project the computer-generated images onto a big screen. Another little LCD monitor screen facing the bicycle displays an elementary ground plan of each city, with an indicator showing the momentary position of the cyclist.

The 1989 Manhattan version of this work includes eight distinct fictional storylines in the form of soliloquys by ex-Mayor Koch, Frank Lloyd Wright, Donald Trump, a tour-guide, a confidence trickster, an ambassador, and a taxi-driver. Each storyline has a particular letter colour so that the bicyclist can choose one or another to follow the route of a specific narration. In the 1990 Amsterdam and 1991-ongoing Karlsruhe versions, the letters are scaled so that they have the same dimension and site as the real buildings, which they replace. This gives rise to an altered but precise representation of the real architectural appearance of these cities. The texts for these two cities are mainly developed from archive documents that communicate mundane historical events there.

Driven by huge amounts of computing software and hardware and financed in cooperation with the Ministry of Culture of the Netherlands, Shaw's *The Legible City* was previewed in 1988 at 'Het Postmoderne aan Kinderen Verklaaand', at the Bonnefanten Museum, Maastricht. It has subsequently been installed in museums in, amongst many other countries, Belgium, Japan, the United States, Australia, France, Germany, Italy, and Finland.

Yet Shaw's aim in *The Legible City* is to bridge the gap between 'clicking' and 'surfing' the Internet and true technological democratic participation opened up by the advent of interactive computer art, technological installation, and futural cinema (Rush, 2005: 222). In this, his large-scale work, Shaw addresses the entry of interactivity onto the art scene as a possible means of revising what art is, what its democratic possibilities might be, and what we should call people who enjoy new media art. For previously 'passive' museumgoers and viewers have been transformed into active participants, players, and users. Since the installation of *The Legible City*, there has been a great deal of debate among artists about whether such attempts at viewer participation in interactive art are, or ever could be, successful. This also precisely illustrates the central stake in this discussion of Stiegler and Virilio: the former thinks new media can present the possibility of counteracting telecracy: the latter disagrees entirely and argues that new media has a very different task.

Virilio accuses thinkers such as Stiegler of believing that new media can counteract clicking and surfing the Internet and pseudo-technological participation by way of the successful actualization of the cultural potential of digital technologies of appearance and disappearance and by way of mobilized sociation. This, Virilio claims, is not possible. Stiegler's idea of actualizing the potential of digital technologies, of sociation, for example, will never be more than an urban illusion. As Virilio argues, it is not the aim of new media to effect a counteraction to the enormous potential of telecracy. Even Shaw knows that, in the 'legible' or overexposed city, 'the difference between "near" and "far" simply ceases to exist' and that only an urban illusion like Stiegler's can hope to counteract the destruction of the unity of urban experience and architectural perspective (Virilio, 1991: 13). But does Shaw also know that the price of this illusion is urban catastrophe? For, according to Virilio, nineteenth and twentieth century urban architecture has given us our fill of urban catastrophe (1991: 20). Here,

Virilio links the idea of philosophical counteraction, the idea (or illusion) of being able to counter telecracy, with aesthetics, negation, and urban catastrophe. Aesthetic movements in the twentieth century such as Italian Fascism under Mussolini present views that encounter the world negatively, and anything or anyone that does not fit into their 'liberation' of the seductions of technique is forcibly constrained by inertia. However, what is important to bear in mind here is that, for Virilio, the task of new media is to reveal the catastrophe of counteraction through its ignition of the information bomb.

Instead of discussing new media in terms of a counteraction of telecracy, then, Virilio emphasizes the escalations implicit in, for example, *The Legible City*'s exploration of interactivity. In 'The Overexposed City' he investigates the potential that new media has to demonstrate that the world in which we live is disastrous and not capable of being countered entirely by any mobilization of the system. In fact, the point of new media for Virilio is its ability to highlight the catastrophic aspects of such systems.

In 'The Overexposed City' and various later essays, Virilio distinguishes three types of new media and cultural development: a new technological space-time, the computerized boundary-surface, and the overexposed city. These or similar terms may well be familiar from the work of other critics. However, it is important to be precise about how Virilio employs them. In other discussions of contemporary cities, culture, and technology (see, for example, Mumford, 2000: 121-124 or Archigram, 2000: 125-128), such terms generally chart a chronological course of mediated development. In this sort of approach, technological space-time like the clock is described as a leading technological form of previous centuries and is discussed in the works of such philosophers as Walter Benjamin or architects like Peter Cook; the computerized boundary-surface challenges technological space-time's representations and leading commentators are geographers like Nigel Thrift; and contemporary discussions of cities and culture emphasize recent technological developments that in their turn critically examine the assumptions of the computerized boundary-surface and can be found in the work of, for example, Stephen Graham and Simon Marvin (2000: 134-136).

While this way of distinguishing between the three developments might well be helpful in some cases, it is not the distinction that Virilio deploys in 'The Overexposed City'.

Instead, he presents a more complex picture of new media and culture in which a new technological space-time, the computerized boundary-surface, and the overexposed city coexist simultaneously in the contemporary period of new media production. So, unlike in Virilio's *The Aesthetics of Disappearance* (2009) that describes overexposure in the city as a nineteenth and twentieth century phenomenon of photography and cinema, the overexposed city in 'The Overexposed City' is a matter of the appearance of new media rather than media historical periodisation. Virilio argues that, for instance, a computer 'interface' can become a surface only if it is first contaminated. Thus understood, the overexposed city is not the boundary at its end, but in a technoscientific state, and this state is 'osmotic' (1991: 17). In other words, the overexposed city does not replace a worn-out underexposed city but, rather like a blotting pad, absorbs the underexposed city and its pre-technoscientific state (a state of largely pre-intellectual and practical activity) by way of the transformation of the boundary into a computerized boundary-surface. The newly computerized boundary-surface, according to Virilio (1991: 17), 'signals a change in the notion of limitation' because the 'limitation of space has become commutation'. The overexposed city is, for Virilio, a computerized boundary-surface, a force ringing the changes in the underexposed city that challenges and escalates its ideas and categories and makes possible the appearance of new ways of radical separation and crossing that destroy those previously dominant themes of the underexposed city such as physical movement. Thus, for example, Virilio (1991: 17) describes as overexposed the (then) Ted Turner owned TV channel Cable News Network (CNN), launched in 1980. This last is because CNN's live 24-hour news service shattered the ideas of temporal limitation and recorded news that were current in Europe and America at the end of the 1970s in addition to the way its technological form escalated and destroyed earlier twentieth century notions of subscription and domestic living space. In fact, today, we might go so far as to argue that Shaw's *The Legible City*, with its physical ride on a stationary bicycle and simulated representations, is so significant because it marks at once the rise *and* the demise of the underexposed city. Yet as a marker of the demise of the underexposed city, Shaw's new media art is also a marker of the rise of the overexposed city. By this, I mean that Shaw's *The Legible City* represents both the beginning of the underexposed city (physical rides, bicycles, etc.) and yet at the same time introduces many of the simulated themes and representational ideas that will lead

to its escalation. Hence, the demise of the underexposed city and the rise of the overexposed city take place *within* the underexposed city. This notion of the absorption of the underexposed city by the overexposed city is quite a complex idea, and to make clear what Virilio is getting at it is worth working through his definitions of a new technological space-time, the computerized boundary-surface, and the overexposed city in some detail.

A New Technological Space-Time

For Virilio, a new technological space-time is increasingly common within new media culture. New media transforms our culture's beliefs and ideas in a way that we can immediately recognize. In 'The Overexposed City', he claims that the new technological space-time is the new media of telematics, of data banks, and is a rite of passage to a wholly 'technical culture' (1991: 13). This 'dematerializes' the standard academic view of technology and physical space if not temporality. Instead of simply transforming culture through its technologization or, in other words, creating a technological and material form of progress, Virilio claims that the new technological space-time disguises the 'immateriality of its parts and networks' (1991: 13). What he is getting at here is that the new technological spaces are not something that we can know naturally. Rather, he insists that a sense of time is generated through the beliefs and ideals of a particular urban culture and that the new technological space-time of new media is one of the most important developments that encourage contemporary culture to create a sense of its increasingly 'imperceptible organization of time' (1991: 14). This is why 'The Overexposed City' argues that the aim of the new technological space-time of new media is to order the world from a point of view 'in which the man/machine interface replaces the facades of buildings as the surfaces of property allotments', and thereby awakens us to the new 'electronic false-day' (1991: 14). For Virilio, the new technological space-time of new media is thus 'a calendar of information "commutations"' we recognize and understand immediately as having 'absolutely no relationship whatsoever to real time' (1991: 14). It presents the world to us in a way that we are not used to, and therefore challenges our beliefs about chronology, history, and temporality. In other words, the new technological space-time, by awakening us to the new electronic false-day, to the way time no longer passes,

serves to introduce a new technological temporality to the world: the established technologies are presented as false or unnatural and are subject to critique or change.

This new technological space-time might well take the form of the appearance of technologies used in nineteenth century cinema or the spatial dimensions of the cathode-ray tube of contemporary television. However, this is not the full extent of Virilio's definition: many of the texts and artefacts that are commonly described as belonging to contemporary cities, culture, and technology by other critics are also categorized as part of the new technological space-time in 'The Overexposed City'. Virilio is at pains to distinguish his own account of the overexposed city from common contemporary ideas about cities, culture, and technology, which is that they and new media are still based on days and nights, real time, and ideas like chronology or historical time. For Virilio, chronology or historical time are ideas that no longer correspond to contemporary cities, cultures, and technologies; rather, they have been swept up into the new technological space-time of contemporary computerized technologies:

> On the computer screen, a time period becomes the 'support-surface' of inscription. Literally, or better cinematically, time surfaces. Thanks to the cathode-ray tube, spatial dimensions have become inseparable from their rate of transmission. As a unity of place without any unity of time, the City has disappeared into the heterogeneity of that regime comprised of the temporality of advanced technologies. The urban figure is no longer designated by a dividing line that separates here from there. Instead, it has become a computerized timetable (1991: 14).

In this scenario of the disappearance of days and nights, real time, chronology, and historical time, new media culture radically subverts, for example, entering the city through a physical gateway; rather, one now passes through an 'audiovisual protocol' (Virilio, 1991: 14). According to Virilio (1991: 14), this is now the day-to-day experience of contemporary urban culture: the whole world is at one's fingertips so long as one has 'methods of audience and surveillance'. The new technological space-time, or the disappearance of chronology and historical time, says Virilio, thus increasingly escalates the already existing technologies of the culture from which they

emerge and assert the instability of those technologies transforming 'even the forms of public greeting and daily reception' (1991: 14).

The Computerized Boundary-Surface, The Overexposed City, and the Information Bomb

In contrast to this new technological space-time, Virilio offers two alternative yet critical developments: the computerized boundary-surface and the overexposed city, both of which will inadvertently be involved in the escalation of the new technological space-time through their challenge to the logics that govern materiality and technology (1991: 15). These are not two entirely different technological developments or urban historical forms. Rather, the overexposed city is the constant activation of the computerized boundary-surface that further radicalizes the latter's challenges to the new technological space-time's incessant representational exchanges. Virilio (1991: 17) defines the computerized boundary-surface or the 'transfer between two environments and two substances' as follows:

> What used to be the boundary of a material, its 'terminus', has become an entryway hidden in the most imperceptible entity. From here on, the appearance of surfaces and superficies conceals a secret transparency, a thickness without thickness, a volume without volume, an imperceptible quantity (1991: 17).

The idea of perceiving the fact that there is an imperceptible entity is a key idea in Virilio's thought, and one that has frequently been misunderstood. Because it is so important for his definitions of the computerized boundary-surface and the overexposed city, it is crucial to grasp what might be at stake in it. Virilio initially derived the idea of perceiving that there is an imperceptible entity not from, say, Shaw's presentation of *The Legible City*, but from Albert Einstein's discussion of the information bomb (Virilio and Kittler, 2001: 98).

The term 'information bomb' thus originates in Einstein's philosophy. However, during the twenty-first century, with the rise of new media, the information bomb has become a subject of debate and controversy. Virilio's most important account of the information bomb is found in his work entitled *The Information Bomb* (2000). In *The*

Information Bomb, Virilio, following Einstein, distinguishes two forms of technological destruction: the atom bomb and the information bomb. Both of these are forms of destruction that occur when they encounter an object or objective (whether it is Hiroshima or Nagasaki, or the interface of a computer or TV screen). The atom bomb is a form of destruction that derives its destructive power over the object from the rapid release of nuclear energy by fission of heavy atomic nuclei, causing damage through heat, blast, and radioactivity. With the information bomb, the response is more complex. Here, people are attracted by the objective of reducing the world to one unique time and repelled by the objective of retaining real or historical time, enthralled by new systems of acceleration, and also horrified by inertia.

For Virilio, the form of destruction that is the information bomb occurs when people are thrown into real time. Virilio argues that interactivity is in some way a form of radioactivity. This comparison of radioactivity with interactivity is not a mere metaphor for Virilio but a very concrete thing and which will eventually involve new forms of destruction. In this sense, such comparisons indicate through their forms of destruction that the advent of the information bomb should involve not military but social deterrence, which would be concerned with preventing the damage caused by the progress of interactivity. What causes the information bomb, and its form of destruction is then initially described by Virilio in 'The Overexposed City' as an 'entity', but within that form of destruction, it is possible to conceive that there is something 'imperceptible' and even literally *unthinkable* about a global society founded on real time. Hence, Virilio's later formulation of the information bomb is predicated originally on perceiving the existence of an imperceptible entity.

Virilio adopts Einstein's idea of the information bomb to describe how new media can escalate or destroy established technologies and corporeal ways of representing and perceiving the world. The computerized boundary-surface of new media, he argues, has the capacity to perceive the fact that the imperceptible entity exists: that there are entryways that are hidden even to presently available technologies, surfaces that are concealed in culture, and secret transparencies that cannot be formulated by, for example, Stiegler's mobilized sociation.

Following the introduction of the atom bomb and the information bomb and their forms of destruction (radioactivity and interactivity), the existence of the imperceptible

entity can be signalled by the information bomb in two distinct ways, one of which relates to the computerized boundary-surface and the other to the overexposed city. This difference is the basis of the distinction between the two forms. Virilio describes this difference in terms of the computerized boundary-surface's 'illusion of proximity' and the overexposed city's 'derealization phenomenon':

> Note how the illusion of proximity barely lasts. Where once the *polis* inaugurated a political theater, with its *agora* and its *forum*, now there is only a cathode-ray screen, where the shadows and specters of a community dance amid their processes of disappearance, where cinematism broadcasts the last appearance of urbanism, the last image of an urbanism without urbanity. … Ultimately, the intellectual debate surrounding modernity seems part of a derealization phenomenon which simultaneously involves disciplines of expression, modes of representation and modes of communication (1991: 19-20; original emphases).

The computerized boundary-surface, much like the atom bomb, is thus tied up with forms of destruction involving the production of distance: the old technologies no longer perceive or present the world adequately, and the forms of destruction and escalation evoked are a wish to see 'tact and contact give way to televisual *impact*' (1991: 19; my emphasis). On the other hand, the overexposed city, similar to the information bomb, works through the phenomenon of derealization, through the derealization of extant technologies: the old logics have derealized, it announces, let us discover new ones. In this sense, 'tele-conferencing' Skype or Zoom meetings, for example, run ahead of long-distance conference travel, as the collapsing structure of the old technological space-time challenged by the computer interfaces of new media indicate the possibility of a new, different, 'absence of displacement' or 'tele-negotiated' ways of inversely experiencing and thinking about a world produced by distance (Virilio, 1991: 19).

Helpfully, Virilio provides a clear example of the distinction between the computerized boundary-surface and the overexposed city, each of which he argues allude to 'the urge to flee and escape for a second from an oppressive technological environment, to regain one's senses and one's sense of self' (1991: 19). On the side of the computerized boundary-surface, thanks to satellites, he places the cathode-ray window (1991: 17),

that computerized boundary-surface which brings to each viewer the light of another day and the presence of the antipodal place. Such computerized boundary-surfaces are an abrupt confinement. Their computerization brings absolutely everything precisely to that 'place', that 'location' that has absorbed all locations. According to Virilio, the thing that is exhausted by the computerized boundary-surface is physical or natural relief since temporal distances telescope all localization and all position. In other words, as with live televised events, the places become interchangeable at will or imperceptible entities. However, this 'instantaneity of ubiquity' results in 'the atopia of a singular interface' (Virilio, 1991: 18). For Virilio, this makes the satellite-induced cathode-ray window an illusion of proximity, and therefore a computerized boundary-surface: it allows the imperceptible entity to be invoked only as '*speed distance*', while spatial and temporal distance, thanks to their obliteration, can no longer offer the urban citizen the notion of physical dimension (1991: 18: original emphases).

In contrast to this, Virilio considers contemporary computer interfaces and the technological deregulation of various milieus as key elements of the overexposed city. In deregulated 'topologies' such as this, Virilio argues that inversion and paradox make us discern the building of an imperceptible order. A whole range of technological invisibilities and even masonry or the public highway system is brought into play with no concern for the unity of the urban, and experiments are conducted with urban realization and derealization (1991: 21). In other words, in the wake of the atom and the information bomb in various milieus, it is not just a question of speed distance or the obliteration of the notion of the physical dimension, but rather a question of transfer, transit, and transmission systems. For the technological deregulation of various milieus implies the use of transport, transmigration, networks, and the escalation of the established ideas of material configuration and technological sense. Such developments challenge the urban citizens' presuppositions about what a topology should be and continually undermine the desire to make the computer interface align with their sense of self. People are then constantly at a loss about what the topology of the overexposed city is, and that loss is itself what Virilio calls the derealization phenomenon, and which leads in turn to people raising questions about regaining their senses and their sense of self.

Virilio's discussion of the technological deregulation of various milieus leads to his clearest definitions of and distinctions between the underexposed and the overexposed city:

> Two procedures confront each other. The first is primarily material, constructed of physical elements, walls, thresholds and levels, all precisely located. The other is immaterial, and hence its representations, images and messages afford neither locale nor stability, since they are the vectors of a momentary, instantaneous expression, with all the manipulated meanings and misinformation that presupposes (1991: 22).

For Virilio, then, the overexposed city of new media escalates and destroys established material structures and technologies through the construction of imperceptible entities, not as speed distance or the obliteration of the notion of physical dimension but as a force that shatters traditional ways of constructing physical elements or representing walls, thresholds, and levels. The overexposed city and its computerized interfaces offer disorienting representations: they break the logics and undermine the image categories that the urban citizen is used to, and raise disturbing questions concerning the nature of new media's messaging systems and the 'reality' of cities without locale or stability as part of their very structure.

Unlike Stiegler's notion of new media as a way of generating counteraction, then, for Virilio new media's potential to disorient, escalate, and challenge is the key to its importance. The overexposed city of new media, he says, wages a war on any attempt at counteraction through the construction of the vectors of the imperceptible entity. This potential to challenge and escalate established technologies and efforts at counteraction gives new media a key role in Virilio's thoughts on vision technologies and the cultures of appearance and disappearance.

Conclusion

Virilio's 'The Overexposed City' opens questions about the role of new media in the overexposed city. In this article, we have also explored the importance of Einstein and Virilio's account of the information bomb for thinking about the potential that new media might have to escalate established technologies. Because the information bomb

can perceive the fact that something remains an imperceptible entity in these technologies, it can point to new yet destructive possibilities for thought and action. In contrast to Bernard Stiegler, who argues that the strength of new media is that it has the potential to present a counteraction to telecracy, to the seductive images of television and so on, Virilio sees new media's role as shattering people's sense of themselves and their understandings of the way the urban world works. He argues that the new technological space-time of new media serves the urge to flee, and that the computerized boundary-surface and the overexposed city of new media employ the information bomb to detonate people's sense of self and point to new destructive possibilities. For Virilio, the overexposed city is the radicalization of the computerized boundary-surface. In the computerized boundary-surface, the information bomb appears through speed distance, whereas in the overexposed city the information bomb enacts an escalation not only of speed distance but also of the established ideas of material configuration and technological sensation.

References

Archigram (2000) 'Instant City'. In: Miles, M. (et. al.). *The City Cultures Reader*. London: Routledge: 125-128.

Graham, S. and Marvin, S. (2000) 'The Social and Cultural Life of the City'. In: Miles, M. (et. al.). *The City Cultures Reader*. London: Routledge: 134-136.

Mumford, L. (2000) 'The Monastery and the Clock'. In: Miles, M. (et. al.). *The City Cultures Reader*. London: Routledge: 121-124.

Rush, M. (2005) *New Media in Art*. London: Thames and Hudson.

Stiegler, B. (2009) 'Telecracy Against Democracy'. In: *Cultural Politics*, 6 (2): 171-180.

Virilio, P. (1991) 'The Overexposed City'. In: Virilio, P. *The Lost Dimension*. New York: Semiotexte: 9-27.

Virilio, P. (1995) *The Art of the Motor*. Minneapolis: University of Minnesota Press.

Virilio, P. (1997) *Open Sky*. London: Verso.

Virilio, P. (2000) *Polar Inertia.* London: Sage.

Virilio, P. (2000) *The Information Bomb*. London: Verso.

Virilio, P. (2009) *The Aesthetics of Disappearance.* Cambridge, MA: MIT Press.

Virilio, P. and Kittler, F. (2001) 'The Information Bomb: A Conversation'. In: Armitage, J. ed. *Virilio Live: Selected Interviews*. London: Sage: 97-109.

John Armitage is Visiting Professor of Media Arts at Winchester School of Art, University of Southampton, United Kingdom. He is the editor and author of numerous books on the work of Paul Virilio, including *The Virilio Dictionary* (Edinburgh University Press, 2013) and *Virilio for Architects* (Routledge, 2015).

Email: j.armitage@soton.ac.uk