



Article

Inaugural Lecture of the UOC 2005-2006
Academic Year

The Biases of Electricity

<http://www.uoc.edu/inaugural05/eng/kerckhove.pdf>

Derrick de Kerckhove



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Abstract

According to the technology with which we convey language, we can define three cognitive stages – in which the language itself and the cognitive model and cognitive skills of individuals are modified – in the history of humanity: the oral tradition, the written language and the age of electricity. The age of electricity, which extends, accelerates and redistributes language with increasingly more complex technologies and increasingly more refined codes, can, in turn, be subdivided into three phases: an initial analog phase, followed by a digital phase, up to the appearance of wireless technology. All three are characterized by common trends inherent to the new technologies which extend their influence directly during their use and functioning, but also the effects that these technologies have on social behavior.

The new cognitive space acts entirely through a screen, which has become the principal link with information and which has evolved from unidirectional communication to interactive technologies of exchange and participation in the process, reaching the stage of sharing information over networks, as in the case of blogs, which constitute an active digital personality that can be controlled and that permits the creation of network communities. Parallel to this, however, an ever greater interconnection of the technologies and of the information available in the networks is occurring – both that which the user themselves makes public and that which cannot be controlled – on the digital personality, be it with purely commercial ends or as a system of supervision and security. This fact has opened up a debate that questions whether this process leads us inevitably toward a loss of autonomy and private identity in the networks.

Keywords

electricity, Internet, blog, digital persona

I've been going through a bit of a *blogentity crisis*¹.

Dear students and colleagues, it is a great honor for me to herald the new academic year of one of the first academic online com-

munities of Europe. I wish to congratulate the UOC for its enduring initiative and success. With this lecture, I would like to explore some of the conditions that have made our connections possible and try to perceive trends and patterns that are emerging right now.

* I began to think in terms of biases of electricity for a conference in Madrid (ACTS, January 21st). This is an expanded version of the text and also of the thinking.
1. Posted by D-Max of the buckeyepundit blog on http://buckeyepundit.blogspot.com/2005_04_01_buckeyepundit_archive.html



Three eras



Technology and language

There have been three very large cognitive eras in human history and while they are all superimposed and intertwined today, they have all three been based on the relationships between technology and language. Every time a new dominant technology is introduced to support language, it changes both the language and the cognitive shape of the user as well as a person's cognitive capacities. Oral cultures are based on language that is supported only by the human body; so language in that mode could be said to be exclusively biological. All our gestures reflect the role the body plays in producing meaning and accompanying language. There are still many remnants of the oral cultures but today only few of them, if any, have completely escaped from the influence of later technologies, especially the electric ones. Literacy externalized and fixed language outside the human body and made it recognizable as a tool. Literacy allowed the appropriation of language by people on an individual basis. Literacy gave duration to the technology of the fixed language and allowed it thus to become reference. Being the reference of choice for knowledge, law and commerce, written language spread its biases across all fields of human activities².

Our present situation is that of a rapid metamorphosis provoked by the new language supporting technologies because they accelerate and recombine the properties and the features of both the oral and the literate cultures. Electricity interprets and redistributes language in new, complex patterns of association and dissociation.

Electricity

The third era, the electrical era, is itself upon us as it has been since the appearance of the telegraph. The telegraph started the most important interaction of technologies in history by putting together electricity and language. The result was and remains quasi mythical. The telegraph – and its many variations in today's technological environment – runs language at the speed of light. Electricity accelerates, amplifies and redistributes language in infinitely expanding networks growing in simplicity (of treatment and management) as well as in complexity (of interplaying levels of significance). Maximum speed multiplied by maximum complexity produces new forms, new technologies every day (every minute, perhaps, if we consider software innovation). There has been a gradual refining of the code from the 26 letters of the alphabet to the 01 of digital media³, which is directly related to the need for large capacity and versatility in coding. The smaller the unit, the larger the number of possible combinations. The alphabet can translate much of human experience in 26 letters but only by referencing it in linguistic form. If the resolution of the system to represent experience is made finer by a code made exclusively of zeroes and ones, then things can be translated by only one sign, on or off. At that point of resolution, sensory experiences and material substances as well as linguistic sequences and other structures can be translated and reproduced or recombined in our digital environments. The translation into sequences of zeroes and ones allows not only to translate verbal meaning and spoken language, but also touch, as well as vision and hearing. In the multisensorial digital environment, 0 and 1 become the smallest common denominators of all our experiences physical and mental, actual and virtual. This is among the interesting features of this second phase of electricity.

Three phases

Indeed, let us be aware that the digital is only the second phase of electricity. The first one – which, of course continues as the second unfolds – is the analog phase which carries light, heat and energy. In the analog phase, signals, such as those of radio, telephone, television or long-playing vinyl records are amplified and transported, but not modified or recreated at the arrival point. In phase 2, the digital signal is created, processed, and distributed instantly on demand, as a thought in the mind. Phase 2 is technically digital, but it is also predominantly cognitive. In the analog mode electricity emulates muscular functions of the body and in the digital mode it emulates cognition. As it «goes digital», the culture evolves from a muscular, physiological body-based relationship with electricity to a mental, psychological mind-based

2. Marshall McLuhan reported his observations about that trend in *The Gutenberg Galaxy*.

3. An intermediary step in the reduction of the number of signs is Morse code, that is a three part division, long-short-naught.



one. And we are now well into the third phase, the wireless condition where the whole electronic sensory, muscular and cognitive system is brought back to the body of the user.

Some key biases of the digital phase

- **Virtuality**
- **Connectivity**
- **Hypertextuality**
- **Interactivity**
- **Transparency**
- **Globality**
- **Convergence**
- **Immersion**
- **Random Access**
- **Mobility**
- **Ubiquity**
- **Real-time**

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Biases

By 'bias', I intend a meaning that was first implied by Harold Innis in his celebrated book *The Bias of Communication*, that is, a tendency, inherent in the technology to extend its influence not only directly during its operation, but also beyond, in the effects that technology has on social behavior. Hence, the culture that practices the use of the said technology will show several tendencies that both reflect and are supported and reinforced by the spread of that technology.

There are many more biases to electricity in its three phases than the list above shows and the wireless phase is adding even more. This list is merely indicative and is based on trends that are specific, if not exclusive to electricity in general and digitization in particular. That implies that they could not occur without the new kind of coherence that the digital has brought to electronic technologies both in hardware and in software.

Virtuality

Virtuality is the state of readiness electricity gives to networks and to the electronic tools we use in daily life. It is as if many parts of the whole electronic system of the world were suddenly capable of thinking before acting. Thinking is a virtual operation, so is imagining as Don Quixote learned to his detriment. In that way, humans are profoundly virtual, more so than any machine we have invented. The difference is that the networks are allowing people to be virtual together in an infinity of possible combinations

and think together, thus multiplying minds by minds. The virtualization of thinking is an emergent property of electricity.

Connectivity

Like virtuality, connectivity and interactivity are conditions of life itself henceforth applied to technology. Connectivity has grown exponentially since the invention of the telegraph from point-to-point to everything-to-everything in less than 200 years. This irrepressible drive to connection is expressed by the latest trend of technologies such as RFID and Internet Zero to embed Internet and interconnect everything. RFID – or Radio Frequency Identifying Device – is a technology by which every label of every piece of clothing and every product that has been produced and sold is about to become instantly traceable. It is a bit like a universal but unique, innocent but permanent, dormant but always retrievable bar code. In other words, whatever you are wearing has a single unique address, unique, that is, to that item that you are wearing and not merely to the store or the category that it was found in. You may have bought the same shirt as mine but your shirt has a different address because it is yours. So, not only will the system be able to know where you are, but it will also know what you are wearing.

Hypertextuality

The other current innovation makes that trend even more evident. Internet Zero (I0) is an invention of Neil Gershenfeld. In principle, it is not only possible to give an individual address to all inanimate objects such as clothing and consumer goods, it is now also possible to provide an internet address to every one of the electrical and electronic components of any grid, system or single item, such as the light bulb in the lamp by your bedside. The big novelty here is that all of it can be interconnected on the Internet. What I0 heralds is a kind of technological environment where everything 'knows' about everything else, a technological condition not unlike the biological condition of our body where every cell is co-present and aware of every other part of the body. We know that within the texture of our physical being we have systems of stress and fever and glands that tell us about our condition. This is also the condition to which electronic technology aspires in various kinds of configurations.

Convergence

Convergence is presently focused on the cellular phone. The mobile phone is in the process of recapping the whole history of our major communication media from the spoken and the written word to the telegraph, telephone, radio, photography (cinema), phonography, video, television, all recording machines, computer, mail, fax, e-mail, satellite communication (GPS/GPRS),



Internet and the web. It is already looking beyond the web to podcasting and videocasting. Convergence is also expressed by the implosion of the world on the human body via the cellphone. In fine all data converge to you, the user.

Immersion

This process of internalization follows a pattern already observed with literacy, that a conquering technology begins by an evident externalization phase, before it is internalized to the point of becoming invisible⁴. Something like an SMS calls me wherever I am. Instead of me having to go and get it, it comes to me and says: «You have news». With mobile phones, we put the world in our pocket. It is a communication system which makes me immersed in data at any time. So, this kind of closeness of telephony to the body brings both ubiquity and immersion together in this wireless context. Immersion is the electronic condition par excellence. As McLuhan observed, even the humble electric light bulb is «information at 360 degrees». With the digitization of information we are swimming in data.

Real time and random access

Real time is the time of electricity, while random access is the time of the mind. We have instant random access to the content of our mind. We also need random access to the content of our world database so that it is part of these major technological drives. The development of search engines shows the way. The speed of access calls for instant response from the database, while the software development from Yahoo to Google, Wikipedia and social bookmarking (à la del.icio.us, or flickr) seeks to present the most pertinent responses to the request, a trend that I have branded as 'hypertinence'.

Hypertinence

Hypertinence could be considered as another bias of phase 2. It is the tendency of electricity to summon and regroup all pertinent elements of any information system or situation, depending on random access and responding with growing precision in very near approximations without depending on a hierarchy. Tagging is one huge step taken by the digital culture towards hypertinence. One can henceforth approach a digital object from whatever angle one chooses. Hypertinence is not merely the result of an effective address system, it is the level of pertinence that corresponds to the recognition of closely knit clusters of possibilities reflecting many

angles at once and allowing for many educated choices on the part of the user. It is the best approximate matching between text and context, between a keyword and the most likely context of the request. The strategies to achieve hypertinence vary from page-ranking by linkage frequency (Google) to social bookmarking.

Ubiquity

The distribution of the self is only in one place, that of the body in proprioception, although some rare cases are reported in clinical psychiatry of people who can literally feel things at a distance. Identity, however, can henceforth be both shared and distributed, as with our «digital persona» or in blogs, for instance. On a blog, I am posted along with my network and the index of my interests. While the core of me remains presumably in my proprioceptive self, my presence is globally distributed and can be rejoined in some fashion from anywhere at anytime. This has brought a change of scale to our self-image as well as a change in spatial referents. For a kid who is sending a collective SMS to his personal tribe, nodes of connectivity are beginning to acquire as much if not more relevance than place.

Globality

The cellular phone has enlarged our personal space to the size of the planet. It is, of all the converging electronic technologies, that which makes us truly global. Even if we only use it to call our parents. Globality is a natural trend of electricity as well. It really began long before television or the Internet, already with the telegraph. The foundation of the International Telecommunications Union in the mid nineteenth century marked the recognition that the human presence on the planet had connected.

Thanks to the mobile phone, according to Marco Susani, Motorola's chief designer, we carry around ourselves an ever expanding communication aura. The cellular phone is the navigating instrument, the universal compass of our new planetary dimension. Today, the cellular phone combines our global access with our local presence, giving a commensurate relationship to both. We are all global, even those who refuse to carry a cell phone, even those who cannot afford them. We connect with the whole planet via satellite, we change our scale and we become global persons merely by watching television and the weather report at night. We simply have enlarged our scope, but we have not enlarged our sense of responsibility. Globalism is to the world what civism is to the city, that is, a sense of the rights and responsibilities that we have towards the much larger expanse of our own reality, a change of physical distribution⁵.

4 James Joyce had observed this phenomenon when he wrote in *Finnegans Wake*: «The viability of our vicinals is invincible as long as it is invisible».

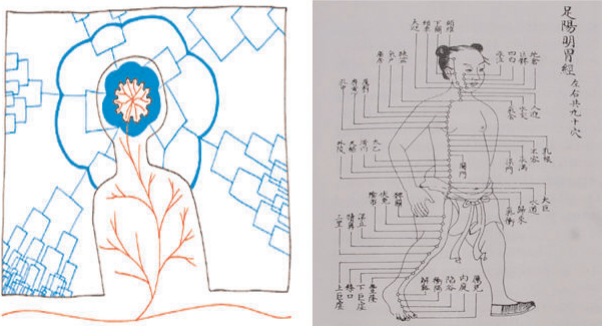
5. It should be noted that the world response to what happened in the Indian Ocean has been spectacular and very promising regarding our eventual overcoming of the present crisis. I say this in spite of the fact that we are living through one of the absolute worst periods of my own lifetime.



Transparency

Keeping in mind that we are talking about the cognitive effects of the relationships between language and technology, it is important to observe here that globality and transparency are direct and exclusive consequences of electricity, the first, from the analogue phase, the other from the digital. Transparency is perhaps the least expected, and yet one of the most characteristic effects of electricity. The nature of the electricity is to bring things up, to make them visible. It is almost insidious. Obviously, the electric light bulb was from the start one of electricity's strategies towards illuminating the dark. Our cities and their nightscape have been permanently changed by electric lighting. But the digital phase carries this trend of transparency much further into the data world, a cognitive world. All that is hidden, as the biblical prophecy announces, is destined to be revealed. On the one hand, data about ourselves and anything else is accumulating at high speed. On the other, at least in principle, all data is accessible one way or the other to someone who really wants to know.

The body electric



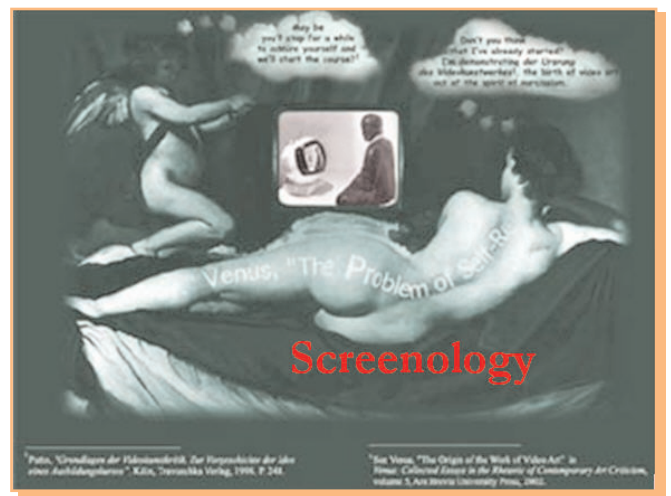
The body electric

Everything technological has always been by way of a kind of emulation of a physiological reality within our own body or our mind. After all, our models are taken there, our models of processing,

our models of projection, our models of action and interaction, all these come from my body. The technobiology of electricity is based on the fact that it is both within and without the human body so that there is a natural continuity between my inside and my outside⁶. With that loop of constant interactions between the means by which we basically function organically and socially, the difference between the organic and the technological are becoming less and less visible even though their boundaries are still traceable at this point in our lives. Our selves have fuzzy boundaries, being more than ever interconnected with wired and wireless media that restructure our sensory life and change our use of time and space; it is a hybrid, bionic condition.

The technobiology of the telephone brings the electronic convergence to the body. All digital appliances are extensions of our senses and of our communication capabilities, but the mobile phone brings the electricity back to the body. What happens is that the single unified electronic grid of the world, which is a projection from the human central nervous system, goes around the planet and then comes back to the body⁷.

The technobiology of wirelessness goes one step further. The take-off point of electricity and of the digital arise in the wireless, because as long as you have the umbilical cord attached to some business or some building or some place you are still a prisoner of space. Wirelessness strives for this total independence and autonomy which is the main driver of human and animal education. The basic movement from being in the mother's womb is to cut the umbilical cord, to walk outside the house or the lair and to confront the world or the jungle. Thus there is a very strong biological drive towards wirelessness⁸.



6. The Chinese acupuncturists already had a sense of how electrical can the body be.
7. True, blackouts are only local, even if that local can be half a continent, but, just as the telephone system can lose a circuit without crashing, the electronic grid is globally and totally interconnected.
8. Of course you are no more prisoner of place for not needing anymore to «go to the phone». I can still remember the time when I had to go to the local post office to get to a phone. Practically nobody had a phone in the French countryside where I was brought up and if you did not have a phone, you would go through loops and rituals to order it and you might get it six months later and then you would spend days waiting for a dial tone!



Screenology

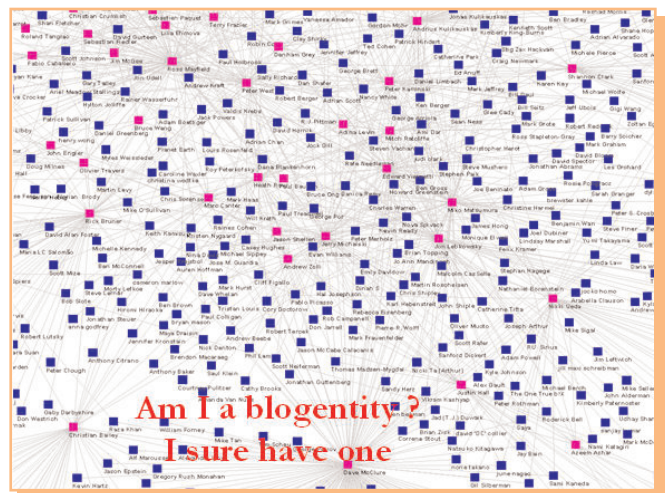
A thing to be aware of concerning the new cognitive space integrated by digital convergence is that it is entirely mediated by a screen. The screen has become a cognitive prosthesis of major importance. What is the role of the screen in our life? It is becoming our principal connection to information. It is becoming the main cognitive interface. We spend more time in front of a screen than in front of a page. Three screens share on the average about a third of our waking life. The first screen is the TV screen, the old standby, the much maligned and abused cathode ray tube still painting its colors on our watchful retinas. The second screen, our «second self» (to quote Sherry Turkle) is that of our computers, desktops, laptops and palmtops that have already overtaken the first at least in terms of the time we devote to it on the average. We now pay more attention to our computers than to our TV⁹. We still spend more time in front of the TV screen (36%) than that of the mobile phone (13%), our third screen. But you could say that the time we spend with the third screen is quality time. It is focused, active, in gear.

Since the invention of the personal computer, instead of merely watching a screen, we have learned to control it. Laptops turned TV's couch potatoes into road warriors. More than the other two screen machines in our lives, the mobile phone is an immersive experience machine. So much so, in such a relentless way that someone may have to invent the notion of 'experience overload' the way we used to talk about 'information overload'. The number of experiences that we can have with single purpose tools, such as the telephone, television or computers, is multiplied by the number of occasions and situations in which we find ourselves in the course of an ordinary day¹⁰.

Last night, spending a few moments absorbed into the screen of my P910, when the task was done and I looked back up, the switch in realities was staggering and eminently palpable. I viscerally FELT the shift in... modality, in mindframe, in realities.¹¹

We exchange cognitive processing between our minds and our screens. We actually negotiate the meaning that appears

on our screens as opposed to just taking what is offered as regular TV fare. This, of course implies that to share meaning is also to share the responsibility for that meaning. This is a different form of responsibility from that of the reader on paper. Surely there is a process of appropriation of language by the reader who internalizes and thus controls language within. The education of the reader is to extract maximum meaning and pertinence from the reading process and to store it within. The screen does the reverse: it partly expropriates consciousness by externalizing and displaying much of its linguistic and related cognitive processes. Ever since photography, there has been a gradual emigration of the mind from the head to the screen, and subsequently an emigration of the person from the body to the network. The screen and the network propose to the mind an inverse kind of orientation. The introspective rumination of the reader gives way to the outwardly physical involvement of the user with the keyboard and the mouse. So, having turned ourselves inside out, with improving software, accelerated communications, our mental output is transformed, but nevertheless more shared than ever, both with people and with machines because on line we are dealing with more people than ever.



9. On the average, of all their screen viewing time, that includes also cinema screens and cameras, North Americans spend 38% of it with a computer, versus 36 %, with a TV.

10. Kids get it. That's because this generation of users, those heavy users in particular, boys and girls and young adults (15-20) are the first to have been born with it. They take it for granted; they take for granted that they will soon be watching on their third screen all the TV they need, in short bursts of 2 minutes, the way radio gives us the news on the all-news channels. Why would they waste their active brain power on the lengthy _ dramas and newscasts their parents watch? The two-minute TV «mobisode» is addressed to the Google generation, people who don't digest information, but surf, click and sample it, on demand. 80% of young people who own a cellular phone keep it on all the time. They are always on, like attention when we pay attention. They are the hyperkids, they can always get the whole picture from a minimal fragment, a tiny screen, the third screen.

11. Posted by «Bopuc» on <http://bopuc.levendis.com/weblog/archives/-2005/02/20/screenology.php>

The author adds: «The screen is really messing with my head. I don't mean just the screens of my computer... I mean 'the screen', as the interface to the network and my expanded mind...».

The author adds below something which intrigued me: «Ten years ago, Ddek's^[w1] *The Skin of Culture: Investigating the New Electronic Reality*^[w2] pulled the lid back on my mind. Now his *The Architecture of Intelligence (The Information Technology Revolution in Architecture)*^[w3] (Excerpts) is pulling it right out of my head... To counter this effect, a simultaneous reading of *Mind Hacks*^[w4] and *Turning the Mind into an Ally*^[w5] (Sakyong Mipham, Pema Chodron), to push it back in, trying to keep it within itself.

Half the time I don't know if I'm dreaming.»



Am I a blogentity?

Our digital personality is not anymore only a passive one. The active one is made by blogs and bloggers. Like SMS, blogs had been around for years without anyone noticing them but now they have become very important because they have matured in the consciousness of the users of the Internet, and the people who are blogging are in fact achieving the first level of psychological maturity that the Internet can actually produce. The blog is the soul of the cyborg because at the heart of the cyborg is a connected psychology, one of the first real examples of the psychological outcome of the use of the Internet.

If a tree falls in a forest and no one hears, does it make a sound? The answer is, does it matter? By the same token, if you have an opinion, but you don't have a blog, does it matter? Are you an integral part of the web's existence – a blogentity, if you will?¹²

A blog is not just a diary that a person publishes, an electronic print-out. The function of that diary that is published is exactly the opposite of the function of the diary in the literary era. In the literary era people wrote their diary to learn how to write, to learn how to think, and to develop their identity. This was a private thing so the tendency was to keep it to oneself. You did not show it, your diary was your own possession, was your privacy, and anyone who came up and looked at it and read it without your permission was making a very serious breach of privacy that often ended up in a ruined relationship. Today you put your diary online. But it is not only that, you also put an index of the things that interest you. There is an automated searching within your diary for all the things in your blog that are interesting to other people. But it is not only that, in that particular searching engine or index or whatever method you have of classifying information about you, you also have all the people who are interested in that particular aspect of your personality. So, your personality becomes a composite of the interests that people have expressed, all files also, into your blog.

So we can imagine how completely different the psychological approach to a blog is than to a traditional diary. As a projected self-image, the blog we publish about our interest is chosen. It is an active, not a passive digital persona. It is an active digital persona that you actually can control, about which you can say «I stand behind it» or not, but it is up to you to decide what you want to be and the point is that you select it, not anyone else. The blog also builds a community of interests and it becomes your

personal digital community. The networks have introduced a hybrid condition of selfhood and identity, a new concept in the culture which is '*publicity*', a word coined by my colleague Mark Federman at the McLuhan program. Like many necessary hybrid neologisms, this one puts together '*privacy*' and '*publicness*'. So '*publicity*' is that bizarre configuration of myself that is published but remains an indication of who I am.

The Internet has transformed society (how often is this repeated) and blogging is taking that a step further. We will be the first generation of people, since the beginning, to leave a permanent, albeit digital, record of our daily existence. In 1,000 years there will be no question as to how we lived – the explicit record contained not only by news organizations (which give clear details about tragic events and juicy treachery), but also by individual bloggers detailing their life stories, their opinions, and the events that happen to them on a miniscule level. It's unprecedented and we still don't comprehend the changes that may take place in our society because of programs like MovableType.¹³

Private identity

Does electricity like private identity? That is a fundamental question. Is «Homeland Security», a US government personal data surveillance project to fight terrorism, merely an invention of George W. Bush's administration or is George W. Bush's administration itself a gradual invention of electricity maturing in a universal surveillance system? The point is that once the technological drive has begun its course, there is nobody to stop it. Is the interconnec-

**The more they
know about you,
the less you exist
(Marshall McLuhan)**



11. w1: <http://www.google.com/search?q=derrick+de+kerckhove>
w2: <http://www.amazon.com/exec/obidos/tg/detail/-/074942480X/borisanthony-20/104-3394422-0695101>
w3: <http://www.amazon.com/exec/obidos/tg/detail/-/3764364513/borisanthony-20/104-3394422-0695101>
w4: <http://www.amazon.com/exec/obidos/tg/detail/-/0596007795/borisanthony-20/104-3394422-0695101>
w5: <http://www.amazon.com/gp/product/157322345X/104-3394422-0695101?v=glance&n=283155>
12. Posted by Jay Allen on <http://www.theundergrounddialectic.com/mt/archives/000098.html>
13. In <http://www.sixapart.com/movabletype/>



The Biases of Electricity

tion of everything electrical via those tiny chips that will replace labels and barcodes just to keep us in close contact with the world around us? Or is it already past a point quite beyond ourselves? That new development, already going on in certain product lines, may not seem very important, but it is expanding the datasphere of our digital persona¹⁴ and making us more vulnerable to privacy breach. And the fact that it comes from what seems like a legitimate industry necessity to facilitate inventory management in the business of distribution of goods and materials is not reassuring. It will eventually – sooner than later – be applied to us as consumers and actually make us so completely traceable as to hav-

ing nowhere to hide absolutely. In spite of cryptography (even quantum cryptography, the latest available encryption technology is eventually decipherable), those who really want to can find anything they want. Between GoogleEarth and your cellphone, you – or your digital persona – have nowhere to hide.

Hence a rising anxiety among cultural observers – including McLuhan – that we may be losing autonomy and perhaps also identity to the networks. The interesting debate of the immediate future here is to decide whether we are willing to give up that much control over our private concerns.

Happy New Academic Year!

Recommended citation:

KERCKHOVE, Derrick de (2005). «The Biases of Electricity». In: *Inaugural Lecture of the UOC 2005-2006 Academic Year* (2005: Barcelona) [online article]. UOC. [Date of citation: dd/mm/yy].
<<http://www.uoc.edu/inaugural05/eng/kerckhove.pdf>>

14. My digital persona is made up of all the data that is collected about me. The notion was coined by Australian business consultant, Roger Clarke. I have both active and passive digital personas. The passive digital persona which is the one about which we do not know or do not control the information. It is a model of the individual established to collect vital statistics, facts, analyses and all kind of miscellaneous data about a given person, and it is intended for use as a proxy for that individual to facilitate financial and other transactions.



Derrick de Kerckhove

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He is Director of the McLuhan Program in Culture & Technology and Professor in the Department of French at the University of Toronto. He received his Ph.D. in French Language and Literature from the University of Toronto in 1975 and a *Doctorat du 3e cycle* in Sociology of Art from the University of Tours (France) in 1979.

Derrick de Kerckhove has offered connected intelligence workshops worldwide, and now offers this innovative approach to business, government and academe to help small groups to think together in a disciplined and effective way while using digital technologies. In the same line, he has contributed to the architecture of Hypersession, a collaborative software now being developed by Emitting Media and used for various educational situations. As a consultant in media, cultural interests and related policies, Derrick de Kerckhove has participated in the preparation and brainstorming sessions for the plans for: the Ontario Pavilion at Expo '92 in Seville, the Canada in Space exhibit, and the Toronto Broadcast Centre for the CBC.

He has been involved in the *Cité des Sciences et de l'Industrie* in Paris for 2004. He is member of the cultural committee of Toronto's bid for the Olympics in 2008, active member of the *Vivendi Institut de prospective* where he is in charge of investigating the future technological and business development of the new technologies. He has been decorated by the Government of France with the order of *Les Palmes académiques*.

Member of the Club of Rome since 1995, Derrick de Kerckhove is, most recently, the holder of the prestigious Papamarkou Chair in Education and Technology at the Library of Congress in Washington, DC.

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More information about the author in <http://www.mcluhan.utoronto.ca/derrickdekerckhove.htm>