

Possible Features of the Next

Twenty-Five Years

Twenty-five years, at the present rate of technological, cultural and political turnover, is a very long time. The usually projected scope is five years and that is only for technological advance, not social consequences. And even with the five years' range, trend analysts tend to fall short, generally by putting these short-term advances still too far away. Bandwidth growth is an example. Who would have predicted even three years ago that Wi-Fi would begin to rival fiber for wireless bandwidth delivery, or that Generation 4 cellular technologies would be on their way even before G3 was implemented? On the other hand, it is now a cliché to say that prophets should not merely want to predict the future; visionaries should simply will it to happen. Thanks to quantum computing, this boast may become truer than ever before. Just as genetic engineering and nanotechnologies are reversing the dominance of nature over culture, in the long run, the kind of mentality that quantum technology will foster could reverse the order of precedence between thought and reality.

Consequently, what interests me in venturing speculations about the next twenty-five years is how the minds of people all over the world are going to change, not only because of communication technologies such as cellular phones and Wi-Fi hotspots, but also because of the change of scale already developing in the way people see themselves and their place in the world. Globalization, not only of the economic kind, but more specifically at the psychological level, is one of the main drivers of a new mentality East and West. Globalization has been on the rise since the telegraph, but nobody noticed it until McLuhan observed that, under electronic conditions, and especially when television brought the whole world into our living rooms, we have been living in a "global village." We are indeed "global" every time we pick up a telephone, even more so when that telephone is portable. Holding a cellphone in your hand is akin to holding the whole world in your hand. At least, that would be the ideal of convergence—instant, complete and ubiquitous delivery of services and goods that hardware and software technologies are pushing for. Before we get there with the attending and necessary global state of mind, we still have to overcome a difficult transition time that is marked by the implosion of the planet via media. Implosion is the dangerous side of electricity's physical tendency to integrate. The imploding second tower of the World Trade Centre in New York on 9.11, 2001 was both an effect and an image of a world crashing down upon itself, bringing in direct confrontation hugely disparate human conditions handling or mishandling the extremely powerful tools of ordinary life.

We have now to contend with the speed, the range and the trigger sensitivity of weapons of mass destruction. Maybe Saddam Hussein really didn't have any, but there are plenty other people who do, and we haven't finished inventing them. Inevitably, there are the perils and diseases of the information age. Of course humanity will win in the end, as it has done so far, but it is facing the third and perhaps the major challenge since the wars of religion and the two World Wars. We seem to need wars or revolutions to adopt serious change. The religious wars of the past were the result of our learning to deal with private opinion and the increasing sense of selfhood we inherited from the printing press. The cure for the religious wars was the separation of Church and State and the administration of the secular by the secular for the secular. The cure for terrorist wars could use some of that, of course, but that may not be enough.

At the 2002 Ars Electronica Symposium, Paul Virilio made this important observation that what was happening today was not the third World War, but the first World Civil War (see article p. 74). Terrorism is today's "natural form of war." It is waged by and via information. It is relatively low cost at the entry level, but its payload is devastating. Suicide-bombing is comparatively unstoppable and its terror effect is multiplied by the evidence of the self-sacrifice of the bomber. It is a military behavior and it reminds one of the Kamikaze, the suicide pilots from Japan who hurled their planes against the enemy in the name of the Emperor. The example is contagious. And people will devise ever more ingenious and media worthy ways of dealing their blows. It will only get worse before it gets better. How do we, the people, deal with that? There are two options: one, to do nothing. Let's imagine that, in spite of the immense provocation, after 9.11., the American administration ruled by wisdom, had decided not to retaliate, especially not against an unspecified enemy or against a not provably indictable country such as Afghanistan. The world would undoubtedly be a better place today and the American economy in better shape. This was not to be, partly because of tragically flawed elections in Florida.

It is uncanny to observe that if he appeared to be wring in 1984, Orwell is proving right twenty years later. Several features of his ominous novel are becoming only too real today, for example the continentalization of the world, the omnipresence of screens, newspeak (have you checked your smspeak lately?), and, above all, the predictable consequences of homeland security. Indeed, in the fight against terrorism, another option is to take the technological route and tag everybody for security's sake. At which point our independence and autonomy will be seriously threatened. To attempt to prevent terrorist attacks, technology will dovetail with politics to reduce people's privacy, and hence reduce their identity. What Steve Mann aptly calls "sousveillance," that is, data collection on private citizens, is beginning to invade privacy in surreptitious manners. For example, the Canadian government (without consulting the Canadian people on the matter) has granted permission to the US intelligence agencies to access Canadian citizens' financial records if they are suspected of criminal activities or of supporting terrorists. It remains to be seen whether this is an appropriate way of reducing the danger, but the problem with this trend is that it also fits perfectly with a major techno-cultural bias of electricity itself which is to eviscerate private identities by turning our nervous system, all our senses and now also our cognitive processing inside out and transforming our most intimate personalities into so much data. "The more they know about you, the less you exist," said McLuhan. This is so true, and so reminiscent of other major ground shifts in techno-psychology. If everybody on the planet becomes traceable via electronic devices all interconnected, archiving everything, something that could be on the horizon with developments of tracking devices such as RFID (Radio Frequency Identifying Devices) that cost nothing to produce and administer, people will be on permanent record from cradle to grave. Even newborns in Africa as well as Canada will be tagged, as if it were a kind of secular, electronic ritual of admission in the human community, like circumcision or baptism. As they grow under the gaze of a myriad sensors and cameras, ordinary citizens, stripped of their civil liberties, will be as under the Medieval God—except that this one is not necessarily benevolent. The Panopticon does not even need a person to watch; automation can eventually do the job of tracing, indicting and even punishing you. But this may not be a good method: trying to repress terrorism has so far generated the opposite effect of increasing it. Terrorism replays the hydra myth in full regalia. This is the story where for each head of the dragon you chop off, two more instantly grow in its place. We need to learn something that is still unknown, but I have a hunch that the problem will have been resolved by 2030. The question is: Will we be the same, have the same attitudes, the same expectations, the same politics

as we have now? Is there a political system that, like the European Union, for example, allows very different cultures to collaborate under one roof?

Continentalism is a forerunner of globalism. It could be a consequence of people seeing their region on TV weather stations and recognizing the oceans as natural frontiers, but seemingly nothing equivalent to them on land. As Orwell predicted but not as darkly, the world population has indeed reorganized itself in large continental groupings—the European Union, NAFTA, Mercosur, ASEAN countries, etc. Adapting the models to the globe may provide a political answer to the ills of globalization. Globalism, as an ideology, is the equivalent of civism, an ethics that corresponds to the scale of the city and that spells out the rights, privileges and obligations of the private citizen. Globalism is being practised by a growing number of citizens, but with a greater scope and on a larger scale— that of the planet. As that new scale is being integrated via the media, new psychological dimensions are being tested in response to new stimuli. We may turn to rhythm and tactile perception to integrate and navigate the many levels of perception, both personal and media-expanded, that we may encounter at any given moment. An extended sensibility brings upon itself an extended responsibility, which may be the motivating factor beneath the vocation of so many people internationally in movements such as “no-glob- alists,” political activists and protestors at big city meetings.

Our accelerated lives require new levels of processing ability. Just as computer technologies supported and focused interest on the brain and on cognitive sciences, quantum technology now developing may push problem-solving to much higher levels at much greater speeds, not as New Age philosophy, but as a science with genuine applications. Quantum bits or Q-bits are very different in their mode of operation from numerical data. They do not follow each other in rapid succession, thus limiting processing to a single problem at a time, but they resonate, oscillate together, in any number of complex combinations. This simultaneous and mutual cross-checking of parameters and data allows self-organizing solutions to emerge and to resolve problems and contradictions at many different levels at once. In human, non-technological terms, that is how intuition is achieved. To achieve an intuitive state of mindfulness or expanded awareness, many heterogeneous sources, including proprioceptive sensations and hardly conscious recordings from the immediate context, are combined at much higher speeds than those achieved by more mundane mental processing. Today, quantum computing is still in its infancy, but ten years from now, it should combine with molecular computing to begin producing a new generation of computing and problem-solving.

In all of that, we will need help from our own as yet not very well tested cognitive resources. Connectivity is upon us as an extension of our skin and also our mind. We need a new psychology to account for the very specific impacts networked media have upon us. I have called it “technopsychology,” not only because it addresses those psychological consequences of how we adapt our cognitive strategies and our sensibility to every major technology that affects language, but also because psychology itself should take a harder look at its own foundations which are not, as so many believe, grounded in some “eternal human nature,” but in common literacy that creates a sense of “self” in the first place. Among the effects of the newer technologies that affect and transport or modify language is that networks connect intelligences among themselves and make them collaborate in real-time, as well as archiving and making their work available. Blogging, for example, is a psycho-technology that brings together and shapes the patterns of association of many people in differing configurations. The blog is one of the most evident signs of maturation of the web since the invention of search engines.

The blog is the soul of the cyborg: just as the cyborg is a body connected to the network,

the blog is a networked psychological artifact revealing a networked identity that comes together bearing the twin affirmation of self (as in a private diary, but, in this case, instantly made public) and other, the network of people who share the interests expressed in the blogs. The bloggers constitute a kind of "just-in-time" community of true interest, made up of untold and indeterminate numbers of contributors. Blogging is a very open system that conveys specific status and value to the users. The openness of a self-organizing system does not necessarily equate with either arbitrariness or lack of discrimination. However, it does entail several levels of responsibility, including those of continuity and leadership, to say nothing of trust, truthfulness, and wisdom.

This form is likely to refine itself, and develop into new varieties that will self-organize, springing, as in the days of classic and modern literature and drama, from the innovations of the most talented and committed. The blog is capable of producing a new literature that will eventually furnish the contents, not only of sites on line, but also of the imagination of the users.

The Semantic Web, another brainchild of Tim Berners-Lee (who was awarded an Honorary Golden Nica at Prix Ars Electronica 1995 in the category "Interactive Art"), is yet another step of electricity in the direction of hypertinence. Hypertinence, that is the pertinence of access and retrieval on line, is the cognitive end of the evolution of electricity. Just as we will eventually connect on line without fussing with wires and outlets, we will have instant access to all the non-commercialized contents of the Web (assuming that some things will have remained free in the next twenty-five years), simply by thinking about them. This is the way we access our own memory, without ever questioning what sensational search engine is responsible for such speed and such accuracy. Mind-machine-direct-connections can be realized today to a certain extent by tracking eye-movements or ocular muscle tapping, but in the future they will get as close as possible to thinking with effects in real time. This may take the shape of "vitronics," screens that can be applied directly to the eyes like contact lenses, or the form of implants such as are being experimented on today by Kevin Warwick, among others.

Culture has been gradually taking on nature ever since the first technology was invented. Today, genetic engineering is making the point clearer because people are creating new species instead of remaining dependent on natural programming. Cloning and recombining species are demiurgic, mythic steps towards the rewriting of the human, animal and vegetal reigns. The real issue is now more than ever a social and ethical one. We have entered the third major era of humankind, that of electricity, but we have not yet fully developed the social model corresponding to the new implosive condition of multiculturalism in a quasi-transparent world of information and communications. We need a new image of humanity and of individual people, of groups and cultures, we need a new sense of scale, that of the planet itself, a new sense of time, that of millennia. The builders of cathedrals who spanned several generations over several centuries could still teach us a lesson about how to think about the long term, beyond the limits of the individual life. This is not merely predicting reality; it is making it happen simply by enlarging our perception and understanding. As individuals, we may find out over the next twenty-five years that people really are the masters of their destiny. They don't believe it hard enough. What is becoming clearer now is that, for better or for worse, the world we get, we will beget. It will be the kind of world we collectively believe in.