Computers, speed and us

Written in 2002 for *Prospect Magazine* (but not published), as a counterpart to the online symposium on the impact of the internet on texts, *text-e*, co-curated with the philosopher Gloria Origgi.

I.

This article is in a print magazine, but it could have been written for an online magazine; as it happens, you can also find it online and might even be reading it on-screen. It was composed on a computer, set by a computer, and it is a fair bet that its readers are used to typing their thoughts and documents onto a computer. You might have published some pieces online, expressed your views via cyberspace and you are likely, on the whole, to communicate with many of your friends, acquaintances and colleagues via email. None of this is new: we are all doing the digital thing.

But then of course this is quite untrue: the digital thing is all terribly new. You may be aware of this shift and enjoy it; others might complain about it, although many of us have adapted without really noticing any major difference. Still: there is plenty of talk about the fact that we are connected; there are countless studies of the cultural consequences of our wired wireless culture and its effects on our computer-dazed children; evaluations of the modalities of e-mail communication; studies on the desirability of eBooks; conferences on the role of Internet in academic life; symposia on the future of Internet shopping. Computers and software house our diaries and our memory, change the way we work, the way we run our family, love and social lives. The Web, meanwhile, grows.

It is not clear that we are yet able to see how far we have come. The speed of development is probably felt more acutely by those who have not taken to running as fast as technology. If you routinely buy a new PC once every two years, and have been doing so for the past seven or eight years, chances are you will have already forgotten what it felt like to type your university papers on an electric typewriter whose self-correcting tape had run out and with heavy doses of Tipp-Ex. Do you remember? You might, however, regret the feel and look of manual typewriters, those collectors' items. And then of course you might still prefer manuscript writing. But that is another matter.

How, then, did this happen? What does our technological dependence mean on an individual level? Should we be worried about it? These questions are related to each other, in that each one addresses 'meta' issues about the technological means of accessing and distributing information; but they are all asking very distinct things. One is a historical question; another is a social and psychological one; the last is moral but may also open the way for evaluation, prediction or science fiction.

The history is still hard to write because we are in the middle of it all, and because the range of impact of digital technologies is hard to evaluate. Certainly it differs from previous technological revolutions (such as the craze for automata throughout the

eighteenth century) at least in that our expectancies with regard to the machines are met by reality more often than by our fantasy's reflection, and more immediately than before. Again, the speed of development is one of the central ingredients of this revolution; and what is being developed is in part the speed of execution of the technological product. Don't forget that the speed of computers' operating systems literally doubles every six months. Hence, you can run more and more programs simultaneously on a computer that crashes less and less; have smaller and smaller Palm Pilots with more and more functions and increasing usability. This brings us to the second question (and by extension, to the third one). Speed is what is attractive. Unlike other technological revolutions, this one is intrinsically motored, so to speak, by the potency of speed and by its saleability. We - or, let us say, the average *Prospect* reader - have become speed customers. But even this transformation is happening too quickly for the consumers (as opposed to industries such as the world's telecoms, stock markets and so on) to make sense of it. We are often too busy to breathe between our computerized tasks.

Our experience of speed is a complex one. It touches on the hidden nature of the watertight relation between micro, cerebral events, everyday life and consciousness, from thinking and perceiving to talking, writing, laughing and typing. Our cognitive processes cannot be divorced from the hugely rapid events that take place at the cellular and molecular levels. Life happens quickly. Of course action must take place within a temporal continuum, and you could argue that this continuum is different for each sort of action; there might not even be a continuous relation between the micro level and the macro one. In this case, the speed of execution of a technological product, too, is not absolute but relative; which would account for the apparently seamless way in which we acquire new, faster products, and so for the increasingly rapid development of the digital world. There is always more to be done within a shorter amount of time; you can extend or shrink a minute almost at will. It all depends on how busy you are. Palm Pilots help; email helps even more. Not to speak of the basic, but increasingly 'intelligent' - because capable of more actions per second per nanometer - word-processing software thanks to which I am typing these very words.

II.

But we are now reaching the point at which we need to sit still a little, analyse where we are - socially, psychologically, economically - and how to negotiate our multifold dependency on our machines in a judicious manner. This has been happening in a number of ways, in the form of conferences about everything from the virtues of XML to Internet education or the legal problems of Open Source access. The individual and institutional use of technology is complex; it is not a direct function of technological progress. Questions about the uses and impacts of the Web are also debated on the Internet itself in countless online technology magazines and chat forums (see the *Voice of the Shuttle* meta-index to cyberculture for an impressive list of links, at http://vos.ucsb.edu/browse.asp?id=2710). They have also been analysed over the past six months in the course of an all-virtual symposium called text-e, initiated by the library of the Centre Pompidou in Paris, then conceived by a philosopher, Gloria Origgi, with

whom the author of this article organized, edited and moderated the event. Its form was new because it emulated that of a 'real' symposium. Ten main themes were discussed by invited participants and the public, each one over a fortnight. Each discussion, open to anyone who cared to register their email address and choose a password, was based on a commissioned text, by the likes of Roger Chartier, Jason Epstein, Theodore Zeldin, Dan Sperber or Umberto Eco, translated (the event was trilingual, in French, English, Italian) and edited to a high standard. Submissions from the public were moderated - but not edited, beyond correction of the odd spelling mistake.

By adopting this format, half-way between 'classical' symposium, polished essay and printed, edited discussion of the kind published in this magazine, it was possible to play with time and speed. We experimented with a new breed of writing, something in-between speech and written essay, email and 'chat' speak. We also experimented with the Internet as a tool of communication, by using it in order to talk about it. The *text-e* format allowed you to reflect on what you had to say; to read the discussions in your own time; to close the boxes of those you found boring; to re-read those that interested or intrigued you. (You can access all the archived texts and debates by going to the site, http://www.text-e.org/.) Yet you were participating, and your voice, if you wrote in often enough, became recognizable. Faces emerged out of text, personalities out of syntax: communication was complex, sometimes conflictual - real, then, although virtual.

The speed at which encoded bits of information travel between one mind and the other, whether via satellite or via telephone wires, is remarkable. What is interesting is that we cease to find such tools miraculous as soon as we have gotten used to them - and we tend to get used to them very fast. The virtual symposium worked extremely well and its advantages far outweighed its weaknesses (chief of which was the absence of nice communal meals, coffee and coffee breaks). This, paradoxically, shows why the digital revolution is so hard to understand fully: our new tools are geared at ever higher usability, however much their speed is overtaking the seemingly 'natural' speed with which we usually climb up the technological ladder.

For this reason, it is also possible that, at the level of the ordinary (as opposed to industrial) user, nothing really has changed. If we are creatures of habit, then technology is also fundamentally a matter of habit. This point was defended in text-e by Stevan Harnad, cognitive scientist and famed advocate of the liberation of all scientific publications online (the cause has now been taken up by George Soros's Open Society Institute; see http://www.soros.org/openaccess). If this is true, then all forms of communication, transmission and reception are equal. But the verbalized thought expressed in articulated sounds over the telephone will differ from the verbalized thought digitized as written text - not only because phones, unlike written texts, allow for real-time conversations but also, and especially because written text, unlike the phone, is engraved and communicated in 'analog' mode, *regardless of its medium*. The content is not necessarily dependent on the form - this at least is arguable, and indeed forcefully argued by Roberto Casati in *text-e*.

There is also a more extreme view, expressed, too, during the virtual symposium, that our

attachment to the codex form is mainly a matter of sentiment. The bound codex might have changed reading habits radically (Roger Chartier wrote about that in *text-e*, as a specialist of the history of the book), but, after all, it was preceded - roughly - by manuscript, rolled parchment, papyrus, wax tablet, and stone. Whether attachment to the form within which a written text is transmitted is a matter of 'mere' sentiment or not, it is true that texts can perfectly well exist only as bytes. This article, for instance, might never be printed on the regimental A4 paper (although *Prospect* is a print magazine, and pieces that appear online have all been paper-bound before). The 'original', moreover, need no longer be a hand-corrected manuscript - a point made by Umberto Eco in *text-e* - and the meaning of the 'original' version of a text and book is changing rapidly.

You might argue, though, that magazines, newspapers and books do have a significantly different status in their 'hard' copy version from their online version, and that this is not just the expression of a habit born with the Gutenberg era. It is true that it is simpler to carry *Prospect* in a briefcase than to print out a piece on scattered A4 pages. It might perhaps be true, too, that the digital form might be less durable than analog forms, be they stone or paper. This is a popular view, and the point is evident enough. Individual arguments of this sort are therefore important to think about. But so far they do not make up a case against the optimistic position with regard to our technological 'revolution'. For such a case would have to be unadventurous in too systematic a way to be useful to anyone convinced that computers - like trains, cars, planes and their potential heirs - are here to stay with us and that a revolution is indeed what we are living.

The optimistic position, to put it briefly, relies on an assumption that technologies that facilitate or speed up everyday activities are always bound to be adopted, and that there are *no a priori good reasons* to wish them not to be adopted. Since our human nature and needs remain unchanged, the progressive 'humanization' of high technology (which is happening thanks to the concentration of power in ever smaller chips, which results in the concentration of functions and so in evermore rapid execution) means that it satisfies more and more of our needs, better and better and faster and faster. So, for instance, as Dan Sperber argued in text-e, speech-to-text technologies will progressively replace typing if their efficiency becomes higher than that of typing in terms of speed/precision ratio. Would such a shift matter? Would you miss typing? If you only ever type, do you honestly miss handwriting? And might there not always be a niche for handwriting anyway, just as there is one for running in the era of trains, cars and planes?

Of course, you might say that such predictions actually justify the worries about 'invasion' and the science fiction nightmares. Rather than being the products of conservative forces, these worries would reflect a justifiable concern about our capacity, imagined or real, to invert the relation between need and tool. We might conceivably - so the pessimistic view - end up serving our 'new technologies of information and communication' (NTICs for short), rather than using them to be well informed and communicate intelligently. We don't really need all this stuff; people lived just as well before. And we might end up being incapable of appreciating a Montaigne first edition or even of writing our own names. Learning how to write might even be necessary for learning how to read in the first place (a theory Stevan Harnad described in part in *text-e*).

Moreover, books are ergonomic and they remain with us, while screens flicker and software becomes obsolete. There is nothing safe in this technology. Privacy is even becoming an issue.

Is the ease of access of digital tools really turning us into their idiotic slaves? The only way to address such issues at this point, I think, is to remind ourselves that we are entirely free to learn how to use these tools, and to this extent we, that is the users, are responsible for the tools (rather than the technologies) we end up with. Yes, we would be wrong to believe that humans are changed by technologies and that the communication of information has anything to do with its quality. But no, we are not turning into cyborgs. We just don't quite know what to do with this new, wide open world: it is all happening so fast.

III.

Take again the Internet - for that is the heart of the matter. The ease - and speed - with which browser windows open onto all possible worlds is literally mind-boggling at times. Panicky reactions to it include the fear that our mental, intellectual or cultural health is vulnerable to such a Babel, and indeed that the Internet is Babel, that ease of access means chaos, lack of discrimination, cultural confusion for which current intellectuals are not ready. Ten-year-old children who are taught Excel at school are becoming the teachers of parents who get lost in search engines, until, that is, the grownups learn about Google and become dependent on it. (And of course no one knows what videogame-dazed children will demand of computers in their adult lives.)

The sense that anyone can get lost in this city with billions of streets and no complete A to Z, in this cyberworld that seems at once mass medium and indifferent, user-oriented tool for everything from pornography, publicity and shopping to information, journalism and scholarship ensures that the Internet remains hard to define. It is not exactly a phenomenon, nor, in fact, exactly a mass medium, although it is also a tool with which the mass media can play and invest in (as does AOL Time Warner, for example). But it is a strange tool, akin to a universal receiver - like a television that is nothing when switched off and potentially everything when switched on - but also akin to a personal transmitter.

To be sure, there is something static in the image of millions of lone, faceless individuals clicking away before rectangular monitors, travelling from a food delivery service to a site about ancient Venetian sailboats or to a scanned manuscript page of Montaigne from the Bibliothèque Nationale - all through the sole motion of a finger. Monitors are visors into anything that one wishes to view, but they also seem to reduce our bodies to an index finger with an optical nerve attached. Read an old *Prospect* article? All online; the bound issue is redundant. Should know something about the director of the company that is interviewing you for a job? A simple Google search will do. View a Christie's auction? No need to travel to King Street. The same goes for the Thomas Jefferson speech, the Duke Ellington biography, or that Hegel bibliography. It is all here, or potentially it is all

here - the ‘real’ company’s home page or a site selected by the best search engines and, possibly, signed by authoritative names.

Each one of these cases represents very different uses of the Internet, as service provider, encyclopaedic information carrier and communication device - and there are as many uses as there are human activities and interests. But they also point to an important element peculiar to this strange mirror-world in which digital elements encode all information: authoritativeness is necessary for its survival. Without authoritativeness the Internet can only remain the fresh, blooming, student-like organism whose company is enjoyable but not really consequential. It is fair to say that the Internet’s economic survival beyond the crash of 1998-99 marked the beginning of its adulthood. Sites have evolved (it was a natural selection, some say) and are more usable than they were in the early nineties: nowadays you expect to find online what you had meant to obtain in the ‘real’ world.

Museum Web-sites, for instance, have become much more than publicity panels for the institution: the best are information portals and service providers, directed both within the physical museum and outside it, telling you where they are and when they are open, as well as showing you their collection, linked and indexed. Amazon sends you real books. Online auctions have real effects, and online travel agents had better sell real tickets. (Ryan Air is one of the most successful airlines at a time when mainstream airlines are in great difficulty - and, according to Wired Magazine, 80% of its tickets are sold online.) *Prospect* or *New York Review of Books* articles are identical online to those in print, and they are all there, archived and searchable. *Slate*, one of the first Web magazines, has established figures writing for it and depends for its authoritativeness on the same guarantors of editorial quality as those on which any other good publication depends. The online versions of newspapers have real news, sometimes better still than the printed news because fresher, more updated, and hyperlinked to in-depth articles that give you information on the background to a story. According to Bruno Patino, who edits the Internet edition of *Le Monde* and who was one of the *text-e* speakers, journalism on the Web differs in fundamental ways from traditional journalism precisely because of these features. The online paper should not just be a static reproduction of the print version, but should offer something more; it requires a new breed of journalist.

The technology that allows you to consult library catalogues all over the world is becoming more refined. But it is developing in parallel with the technology that will enable you to read books on eBook reading devices, of the sort described by Jason Epstein (both in the *New York Review of Books* and in *text-e*), and to take notes on them - imagine being able to carry five thick novels onto a plane and barely feel the weight of one. Very few people, however, are using technology in this way. Far more widespread is the use of ‘at-a-distance’ services, from library catalogues to scanned or digitized books. For instance, the website of the Bibliothèque Nationale de France has around 6000 daily visitors [CHECK] to its digital section, *Gallica*, which enables you to read books online - or save them onto your hard disk if there is no copyright restriction. Libraries are becoming gateways to meta-indexes, not only to books; and librarians have also begun to think seriously about the ways in which they could redefine their role in the digital age

(in *text-e* as well - note that the event was set up and sponsored by a major public library, the Bibliothèque publique d'information).

The idea that someone somehow should provide guidance to the parallel world that is the Web is a popular one. It follows on the assumption that Internet is Babel, and leads to the proposition that order needs to be authoritatively imposed on this Babel. One might wonder whether the first assumption and the second proposition are true; and whether the second follows on the first. For the Web has not grown quite as chaotically as it might seem. It is under ten years old (as opposed to the Internet, which is about thirty years old), but already you can distinguish differences between types of users, types of uses, types of sites, and types of search method. In fact search engines began developing as soon as Internet sites sprouted, because new information technologies always trigger a fear of getting lost in a magma of information. When printing began, people in the know expressed that very same fear. But technologies that facilitate the spread of knowledge are bound to spawn their own check systems. Indexes and bibliographies are not only the preserve of pale doctoral students or dusty scholars. Classifying is intrinsic to cognition; we do it all the time. It is an aspect of thinking; it is what enables us to act.

What is not easy to guarantee, however, is the quality of what you classify. And Internet filters, of the kind advocated by Umberto Eco in *text-e*, should be classification systems that include and exclude coherently, intelligently. That, however, might require a meta-classification system that in the end contradicts everything that the Web stands for. Order need not be authoritatively imposed within the Web. It is actually, intrinsically imposed, from below (Google, for instance, functions as a voting system); and it may also be imposed from without, in the sense, again, that you expect to find inside the Web what you saw outside. This is why the issue of copyright for online material is so complex: copyright is necessary for the determination of authority, yet it can also restrict the universal access that one may wish authoritative material to have. Peer-reviewed science journals can remain peer-reviewed once online (so argues Stevan Harnad); and if you know the difference between a good Montaigne translation and a bad one outside the Web, then you'll know the difference online as well. The Internet does not accentuate chaos, nor does it emulate the world: it is, again, a neutral tool, whose capabilities probably still exceed our everyday imagination. But a tool is what it is; like a hammer, a pen, a knife, an electric wire or a laser beam, it can be used for many things indeed. That scenario is at once very old and very new. It is up to us to find ourselves within it.