ALESSANDRO LUDOVICO

Paper and pixel, the mutation of publishing

The death of paper didn't happen

At the beginning of the 20th Century, the death of paper was predicted. It was foreseen just after the advent of public electricity networks and the consequent spreading of new revolutionary media, like the radio and the telegraph. The innovation impetus induced the hypothesis that the electrical transmission of the voice would have ended the printed distribution of information, replacing magazines and books with the faster voice that was transmitted over cables. The future seemed to be with wires everywhere, which would have spread the content of libraries to every home or in public spaces through some sort of broadcasting kiosks provided with primitive headphones. After half a century Marshall McLuhan foresaw a similar process: "the book [is] an increasingly obsolete form of communication", because of its slowness compared to television. In the late fifties it was a question of speed, of changing perception of time and space, and the printed medium seemed to be too slow to diffuse and consume information. Finally, the end of paper was one of the worst prophecies in the eighties, at the beginning of the personal information age. Personal computer marketing figured out the dream of a `paper-less office', with massive magnetic archives that would have replaced huge amounts of paper. But all of this simply didn't happen. Even more, paper, and the printed medium at large, has significantly contributed to spread the new media culture and consciousness. So paper is here to stay. And no shortage of electricity can shut off a printed magazine or a book.
The role of the printed page has radically mutated, from being a prevalent medium in itself to a complementary medium, often used as a static repository of electronic content. The printed page has become precious. That is true because the paper has limited, costly, time-expensive and space-consuming duplication processes. Making a physical copy of a book involves photocopying it page by page, or printing it from a file, again page by page. The result is a bunch of paper with a relevant physical space. And it's the same for magazines: editors have to select their content much more carefully now, because of the huge amount of free content available on electronic networks. Furthermore, electronic networks have also affected personal publishing, with so much self-produced stuff that cries out to be cited or reviewed in print so the printed paper space is, again, more precious. Actually paper and pixel seem to be complementary. Print is becoming the quintessential of the web. The printed editor is the curator, the human filter, the one who decides what to put on a stable medium and what to leave as a message in a bottle thrown into the sea of the net. So the printed page, and its relaxed fruition, let the reader pause and reflect and take notes at the same time being independent of electricity. And paper is preserving a substantial part of the digital culture without hardware and software, describing the new media from the technical side of an old one.

Ink vs. electrons

The differences in consuming paper or digital information are many. Paper involves many senses, mainly touch, smell and sight. Touch tells you the type of information that you're reading when you turn the pages (rough for text books or xeroxes, smooth for magazines and illustrated books). The smell of paper can tell you how old an item of information is (inky for recently printed and mouldy or dusty for older texts). The colour of pages can tell you their age. The paper that turns yellow show its old age, but it takes decades to take this degenerative process. The electronic media are very focused on sight. You can guess the type and age of information mainly by the technology implied, like the resolution and number of colours for the digital pictures, or the graphic style used. There are many differences between paper and electronic magazines. You can check a bunch of papers more rapidly than non-indexed electronic pages, because you can check them all at once by just flipping, instead of clicking and waiting for the next content to appear. Another strategic factor is how much you can use your own photographic memory for retrieving information. Photographic memory on paper is evident and static. You can remember the exact layout of a specific page on a magazine (even related to the time when you bought it), because it is physically in that specific place. Photographic memory doesn't work well on the screen, because it's dynamic and changes every time, even if physically it's the same place with changing contents. When you try to remember where you saw an item of information, you probably refer to the URL or the link that drove you there, but you don't have much more to help you. And the light is also very important. In the electronic media the screen is retro-illuminated. Marshall McLuhan guessed that this characteristic would induce a mystic reverence in the spectator, as the stained glass windows in the churches did during the Middle Ages. Moreover video light shines on the retina stimulating the sight considerably. Paper, on the other hand, is front-illuminated, which is much more relaxing for the sight, and its light changes according to the environment.

Spreading offline memory

With so much abundance of information online, the most precious skill for a reader is his personal filter. Mining the sea of information on the net, with its unstable characteristics, makes people conscious that paper is a stable memory extension, platform-independent and physically limited. After the gigantic effort of digitizing books and magazines using microfilm technology (during the past decades), now there are countless efforts to preserve old printed materials, making them available again. Scanners, OCR software, the Pdf and Html standard do the trick to bring new life to the dead, out of print or missing books and magazines. This rebirth of forgotten or hard to find material is contributing to specific theoretical and historical debate. Photostatic Retrograde, for example, was a xerox art fanzine printed during the eighties and nineties. They've started to make pdf files of every issue, starting from the latest printed one, and uploading them on their website for free download, accomplishing almost two thirds of the work. Moreover, the Langlois Foundation funded a similar project for Radical Software, probably the first media art magazine ever published. All the eleven issues (printed in the seventies) were digitized and made available on their website, providing a significant contribution to media culture researchers and scholars around the world.

Simulated paper

The typographic production was revolutionized in the mid-eighties, thanks to the Apple Macintosh and its first laser printer. Then, scanners and various software completed the array of basic tools required to make designers and pre-press technicians wishful of definitively switching to digital production. Actually, digital processes are going to definitively overcome mechanical production. The simulation of colours through the stochastic distribution of cyan, yellow, magenta and black dots, for example, can't be done with analogue mechanics because of the high quantity of calculations required. So, total automation seems to be one of the frightening future steps, looking at creativity as the most promising missing link. Two software tools show this `machines will replace creative people´ approach: N gen software is the serious one - a self-defined "rapid prototyping graphic design engine that generates saveable graphic files from the user's own text, content filtered through n_Gen's 4Design Modules". The results are cool, good-quality, post-modern layouts, even if somehow anonymous, but, at the same time, indiscernible from a human-composed one. Even if this seems the end of an era, it obviously is not. Actually, this tool can't replace designers for medium complexity work, but it surely can push their attitudes to produce innovative combinations of forms and meanings, instead of always sticking to the same rules. The other tool to consider is Adrian Ward's Signwave Auto-Illustrator, formally “a [...] semi-autonomous, generative software artwork and a fully functional vector graphic design application [...]." The author invites you to “Discover how easy it is to produce complex designs in an exciting and challenging environment that questions how contemporary software should behave". But the tool hides a good amount of irony, degenerating in unpredictable behaviour and sometimes sarcastic errors, playing with the dream of passing the workload to the machine and the consequent frustration of making it work properly.

Distribution and customization

The electronic version of the physical magazine/book is still an undefined product. On one hand, digitizing the content and then printing only the essential copies is a strategy, as is borne out by the Internet Bookmobile project. Founded by the Internet Archive founder, Brewster Khale, it spreads electronic texts physically, printing them on demand in front of libraries, schools and museums. Khale uses basic technologies (computer, printer, binder) stored in a van in which he toured through the United States. These kinds of efforts are, in fact, against the e-book/e-paper proprietary struggle that, in the end, just wants to better control the rights of the publisher. “Using encryption and watermarking systems, publishers hope to connect every copy of a book with a known person, and prevent anyone else from reading it." Richard Stallman noted [5]. Who needs crippled computer-like devices able to read unstable copyright-locked electronic texts? Everyone, instead, needs free exchange of electronic texts that should generate permanent paper copies with cheap methods of reproduction and circulation. And what about the mass circulation of popular books on peer-to-peer networks? Downloading the pdf, rtf or raw text versions of best seller books is easy and effective, but, more importantly, is the proof that the sharing of content is requested as a democratic possibility. The next, definitive electronic evolution of the printed paper will probably be the content printed on demand, or letting people choose from a variety of content to be printed and delivered as a single copy of a book or a magazine. The level of customization of the single copy would be significantly improved as these technologies evolve. And customization will undoubtedly change the editor's role.

It will also declare the end of paper content intended as thousands of copies that run the same exact content. This fixed limit will make writers unsure that their content will be in the hands of all the customers, but will give much more freedom to the readers.
So, actually, paper is flesh and screen is metal. And this cyborg cultural life-form will evolve significantly during the coming times.

ALESSANDRO LUDOVICO is editor of Neural magazine http://www.neural.it. Lives in bari, Italy.