THE TOUCHING CHARM OF PRINT

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Printed media have a highly consolidated visual infrastructure. But printed (preponderant) visual part has been wrongly considered as coinciding with its whole. That is why they have been recently massively translated into another universal medium (the digital) through a direct process. What is missed, much more than nostalgia, is a small perceptual universe that is instinctually unfolded every time the physical medium is used, while it is misdirected if not negated in its new screen-based embodiment.

SCREEN TOUCH VS. PRINT TACTILITY

"A theory of cultural change is impossible without knowledge of the changing sense ratios affected by various externalizations of our senses" (McLuhan 1962, 49)

There is a recurring comparison in the media between the convenience of using printed content in digital form versus its traditional paper format. A published work in a computer file format has a series of promoted qualities: lightness and hence portability, speed in accessing it, its (near) instant ability to be searched, quantified, linked, cross-referenced and more in general "calculated," which makes it a terrifically tool-enforced version of the original work. But there is a constantly underestimated aspect: its "user experience" considered from a perceptual perspective, which, paradoxically, turns out to be quite "deprived" compared to the classic printed publication. It is worth then to analyse it sense by sense. We can assume that digital content uses primarily one sense: sight. Excluding taste, then, we can start considering smell, which is almost completely absent in digital media, if we exclude the eventual smell of the hardware, initially present when the device is very new, due to the first heating of plastic and electronics, but then so light that it's quite irrelevant. Hearing may or may not be involved, depending on the used system, as we don't have standards yet, but a plethora of different open and proprietary software systems. Hearing usually is involved in two different ways. One is to better simulate the print sensorial experience, typically through a sound sample played when the user is virtually turning the pages. The other is the use of alert sounds, which are functional to the digital interface, so to the superstructure that the software system is implementing in the system, resulting then quite unspecific, or anyway not contextualised to the reading experience. In fact they are generally meant to attract attention about some impeding fault or to warn about something about to happen, so their mission is to distract from the reading to focus on an external event.

Sight, instead, is very involved, although the text appears always in the very same way. That's true if we have a classic retro-illuminated screen (a backlit one), like in tablets, smartphones, laptops and the last generation of e-readers, which is meant to ensure readability with any external light condition, so anytime, anywhere (at least until the battery is charged). But it's also true for e-ink based readers, as the screen binary technological nature of half-white-half-black tiny balls guarantees contrast but also a uniformity of the page, only slightly changed by the natural or artificial surrounded lighting. To quote McLuhan, again,

"Unlike previous environmental changes, the electric media constitutes a total and near-instantaneous transformation of culture, values and attitudes." (McLuhan 1969)

In comparison, classic printed publications are using a much richer sensorial environment, providing inputs for multiple sensory modalities.

Again excluding taste, and following the same order, smell is quite directly involved in the composition and age of both paper and ink, indirectly giving specific information about the text, also because it varies a lot, even within the same olfaction domain (old books smell in an ample different degrees of dust and mould, depending on their exposure to light, specific preserving environments, etc.), being often associated by readers with certain content or specific environments like particular libraries, which sums up different smells as any closed environment. Technically there are several hundred so-called VOC, or volatile organic compounds, which books give off, strictly related to the chemical elements used in type of paper, the binding adhesives and the printing inks. In this respect there are a few artworks which since the seventies have tried to synthesise perfumes with the smell of specific printed matter, from old books to a fresh copy of the New York Times, but the most ironic attempt to remark the absence of smell is a fictitious company, establishing an e-commerce website selling their 'Smell of BooksTM'[1] spray cans, to help e-book customers feel more comfortable with their new devices. The product is ironically guaranteed to be "compatible with a wide range of e-reading devices and e-book formats and is 100% DRM-compatible." And addressing a more general concern, "If you've been hesitant to jump on the e-book bandwagon, you're not alone…"

Hearing is mainly about the physical manipulation of the book, including the sound of bending and closing the, usually thicker, cover, which is quite different from the sounds heard while flipping or turning the inside pages. Very importantly, each time we turn a page, the resulting sound is slightly different, and not really quite the same as it is implemented in simulated digital environments. The use of sound in print has been explored by a few experimental artists using samples of manipulated paper to generate compositions. But a more conceptual approach has been taken in *Cyclisations* by Olaf Hochherz[2], a sound artist whose work mainly consists in associating cultural fields using sounds as bridges between them, with their own "language". In Cyclisations he's exploring further his previous experiments with book's acoustic feedback, using it as a filter and integrating it with another conceptually stratified level. The concept of

1. Smell of Books
http://smellofbooks.com
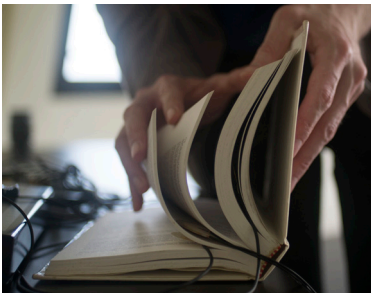
2. Hochherz, Olaf *Cyclisations*
http://hochherz.klingt.org/?p=1500

"feedback" is extensively used through the manipulation and use of books but then integrated in the live enunciation by the cybernetic theoretician Stafford Beer and embedded in the sound pieces. Hochherz refers to cybernetic theories, questioning the dreamed "feedback" system they were investigating through his own practice, which, on the opposite, takes feedback under control. The book's physicality becomes then a starting point, with the sound integration of its content in various coherent forms, and coalesces a virtual representation closely describing it without showing even a single page.

Sight in print is also extensively tested, since print is front-illuminated and therefore depending on very different (natural or artificial) lighting conditions, combined with the extremely varied light-reflecting or light-absorbing characteristics of paper with all their degrees, technologies and filters involved.

And finally touch, and thus tactility, is just reinforcing this comparison. Already in the 60s, Frank K., Lawrence wrote that "Tactual sensitivity appears early in fetal life as probably the first sensory process to become functional." (Frank 1960, 6)

In the digital realm we have a merely functional and decontextualised touch: if we still use mouse or trackpad "prosthetics", our fingers are functionally used for clicking, swiping, or tapping in the very same way for all the different types of content, but in a standardised universal modality, which, again, cannot be conceptually unplugged from the inescapable design of digital interfaces. In the digital realm our fingertips are simply annihilated, even if they possess the highest concentration of touch receptors and thermoreceptors of all the areas of the human skin, aside from our genital parts. From being extremely sensitive and "broadband" input sources for our body they become neutral machine-oriented prosthetics.   This is something we deal with every day, and already in 1983 Baudrillard affirmed that the transition from the tactile to the digital is a primary factor of the contemporary world. (Baudrillard 1983, 115)

In traditional print tactility gives information on different levels, and the process of paper selection is, in fact, still an important part of quality publishers' work. It gives information about colour (sight), texture (touch) and odour (smell) that is, possibly consistent with the whole of the work. If we are already familiar with a book, the texture of its cover unawarely gives us information about its content (confirming what we are about to read) even before we open it, and eventually we would be able to recognise certain books while being blindfolded. Every added element (lamination of any type, hollow punches, special inks, other materials integrated in the cover) is not just an additional

piece of information, but a further experience for both sight and touch, and so further information. Our senses are constructed to have a "very large bandwidth", and "sense" is derived from the Latin word "sensus" that, in this respect, means 'faculty of feeling', which is all but mechanical or standardised. Tactility, as any other sense, is about perceiving differences, and the more differences we are trained to perceive, the more we learn and the more we learn, the more we are able to perceive, in a virtuous endless circle. Quoting McLuhan again "(print)… has acquired new interest as a tool in the training of perception." (1969, 99)

The physicality can be considered through a few other possible perspectives. It'd be even possible to adventure in theorising about bacteria transmitting information through print. In fact they are travelling through different bodies being touched over time by different readers in libraries, or from the author to the enthusiastic fan after an author signing events, or even from one traveller to the other through free newspapers left or passed in commuters' trains or through free flight companies branded magazines in airplanes touched and read by different travellers respectively during one day or one month period. Would they transmit some kind of information, which can unconsciously affect the reading, or just dirt and flu? Although this might sound like pure speculation, it remarks that the physical circulation of information is meant to be not only physical, but remarkably social, while the digital circulation of information is meant to be customised but strictly personal. It'd be defined as "the tension between virtual and visceral" as described by Beth Williamson in her essay "What Does it Mean Not To Touch A Book?." (2015, 155)

We can consider even state of the art digital publications as still a "simulation" of the printed ones (like the classic pdf standard), in a quite ambiguous trajectory. They mimic the structure and conventions of print, adapting them to the needed digital parameters, but they probably fail in re-creating a similar experience, and trying to appeal to sight as much as possible, including, for example, the visually compelling fast zooming (in and out) abilities. The screen has uniquely flexible qualities of display, but it can't effectively render three-dimensional space yet if not through a simulation which our senses recognise as flattened, in any case. It is how French researcher Émeline Brulé defines the digital simulation of print: "mimetism."
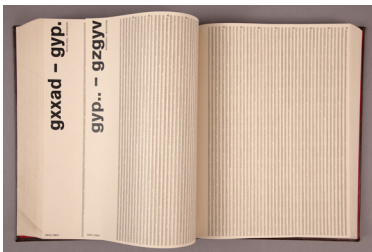
THE MATERIAL SPACE OF INFORMATION

We'd wonder then: how many things do we physically and consciously "touch", establishing an enriched relationship with them? Not too many—but screens and printed materials are surely among them. More generally, materiality has its own space of information, which is very different from the immaterial one. The three-dimensional space of materiality is essential for locating, estimating and recognising cultural objects. But there is more. Since the senses are more deeply involved with the content, we often make an emotional investment in these objects and we don't want to lose this investment as it often happens in the inappreciable, enormous size of the digital space, experienced through a small bi-dimensional screen, incapable of rendering in details the huge content of our hard-disk repositories. Digital publications, being prone to the screen, would have to cope with this aspect of their own nature. But, in turn, they would also take the opportunity to exploit their unique ability of hosting infinitely reprogrammable and infinitely transmittable content. Instead of simulating the (unsurpassed) print "interface", which has been gloriously established and refined since more than five centuries, they would build on the ability to instantly create, combine and calculate content, trying to accomplish the level of intimacy between writer/publisher and reader close to the one that McLuhan attributes to printed materials. And, if properly handled, tactility could play a fundamental role in this process, even if there is no simple equation to fill the gap between the machine and our fingertips. In robotics, for example, the still primitive "tactile sensors" are devices measuring information derived from physical interaction with their environment, but they are generally modelled after the biological sense of cutaneous touch (still heavily simplified), and they are definitely uncertain, for example, when it comes to sensing "pain." How would they "feel", for example, the cover of the book "Unpleasant Design" (Savicic and Savic 2013) that was equipped with a large band of sandpaper? The designer used it to perfectly reflect the principle of exclusion put into practice in urban design like benches that are impossible to lie on, but would a general algorithm be educated enough to interpret it?

  In digital publications tactility would be enhanced in a proper way, avoiding clumsy simulations, and appealing instead to our nerve endings in a direct way, maybe through interconnected new artificial materials. They would provide new information to the screen reader, being eventually able to materially assume a decent number of "states" that would be perceived as
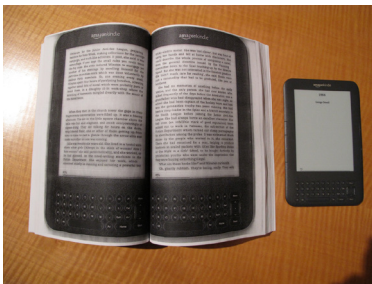
new textures, appropriately reflecting their possibly direct and instinctual relationship with the content. Then, the two different worlds would begin to form new sensorial combinations, and even an hypothetical hybrid between them could be conceivable. It would be in direct relationship with our senses, but simultaneously be able to reflect both the unchangeability of the printed page and the perennial dance of information in our digital world.

SUBVERSIVE PRINTING AS A PERFORMATIVE GESTURE

3. "An Index (5) | Philipp Adrian" http://www.philippadrian.com/project/index-5/

4. "E-Book backup : Jesse England" http://jesseengland.net/index.php?/project/e-book-backup/

5. "Contacts | International Neighborhood" http://www.international-neighborhood.de/books/contacts/

Mixing the different spaces of communication of print and digital is becoming a popular strategy among contemporary media artists, especially through the materialisation of content which is meant to be on the screen in a sizeable and touchable classic format. This is often accomplished using the book as an explicit repository, conceptually collapsing a minimal library in a single item. Referring to the seminal Jorge Luis Borges' "Library of Babel," Philipp Adrian, for example, has compiled his "An Index(5)" [3] printing two volumes with all the possible permutations of five letters, claiming then to have printed the Library of Babel index, as the first five letters of any printed book should be there, somewhere. And if print content is frozen in time, then its qualities can be remarkably useful when we deal with the same content in a digital format. Jesse England's "E-book backup" [4] is applying it literally, reversing the usual backup strategy. It's an artists' book containing the whole text of George Orwell's "1984," whose every page hosts a photocopied picture of the same page displayed on an Amazon Kindle, explicitly referring to the controversial 2009 incident when (England points out) "Kindle users found their copy of George Orwell's 1984 and Animal Farm had been removed from their Kindles without their prior knowledge or consent." And some of the most controversial contemporary artist' books are trying to fill pages with content which is not supposed to be printed, for various reasons. Then some subversive gestures, especially breaking discretion, can be attempted. The anonymously authored "Contacts" [5] is an excellent example: it collects a selection of key decision makers' business cards in art, media, politics and culture, after ten years of "excessive networks" accomplishing a strategic privacy leak. And print as subversive archive has been used paradigmatically at the highest emotionally extent by artist (and UbuWeb founder) Kenneth Goldsmith. In at least a couple of artworks he has committed to bring Aaron Schwartz's vision to the art world through print. Schwartz downloaded and shared 2.7 million copyrighted and

very expensive academic publications from academic online service JSTOR, as a radical and symbolic act, but was arrested and threatened with a possible fine of one million dollars plus several years in prison. He committed suicide in 2013 at the age of 26. (Nelson 2013) One of Goldsmith's most renowned performances (inspired by Schwartz) is "Printing out the Internet"[6] where he asked people to print out what they want from the Internet before sharing it in a gallery space (LABOR in Mexico City). A few tons of paper were delivered and a reading marathon started ("reading the entire internet"). There were, of course, negative reactions, for example the spontaneous online petition asking him to stop the work for environmental reasons. Goldsmith went even further reprinting 250,000 pages from Schwartz's liberated files in a public installation at Kunsthalle Dusseldorf, part of the exhibition 'Smart New World'[7], deliberately performing a gesture he felt did justice to Schwartz's vision. His subversive use of print as archival of unauthorised digital information uses the medium in one intricately illegal way, rendering it into a tactile dimension, where it's difficult to consider it illegal; still one of the most controversial ways print can be used nowadays.

AGENTS VS. MEDIA

Finally from a more general perspective the role of the digital and especially of the internet should start to be questioned, especially in relation to print and retrospectively, looking at the past interactions between print and other media to understand the present.

Jeffrey Schnapp, ex director of the Stanford Humanities Lab affirmed: "the book is a construct in constant evolution: a construct that routinely and dynamically interacts with a shifting array of other media types. In other words, the book is a technology." (Schnapp 2014)

So historically, looking back at how other media has been reflected into print, we can notice that traditional print reacted in various way to newer media.

American Researcher Katie Day Good found that in the 1920s the Chicago Daily News published several 'Radio Photologues' (Good 2013), or travel diaries that could be listened to through the radio and which were visually amplified through the pictures published on the same day on the newspaper. So what radio was doing was to change, not to suppress print, exactly as an agent would do.

Talking about TV we have another outstanding example: the experimental paperbacks by Marshall McLuhan, Jerome Agel and Quentin Fiore. They embodied in the universal paperback format the TV synthetical information aesthetics and lan-

6. *"Printing out the Internet - Wikipedia, the free encyclopedia"*.

7. *"Smart New World - Kunsthalle Düsseldorf"* http://www.kunsthalle-duesseldorf.de/index.php?id=351

guage, accumulating concepts and becoming in the definition of Schnapp "inventory paperbacks" (Schnapp and Michaels 2012).

In order to survive the online competition even newspapers for a decade have included more 'data' in their own visual structure than they ever did, in various graphic forms, from big figures to sophisticated infographics.

So print has been deeply influenced by other media and evolved accordingly.

And if we look at audio and video, they have been slightly influenced in the narratives and in technical specifications by other media, too, including the internet, but they still are mostly sequential in their own nature with the same original characteristics.

They have been 'conditioned', not reinvented.

Then the big question is: is the internet a real medium, since it didn't invent completely new formats which were used by the majority of people, or an agent, inducing radical changes in other historical media, but leaving their inner core intact?

CONCLUSIONS

To exploit all these trajectories what we would need to do is to peek into the empty spaces still left in the juxtaposition between print and digital. There are plenty of these liminal spaces, and it's there that ideas and interventions are yet to be performed. Realising that the infrastructure we have is intrinsically distributed, and re-appropriating it in a specific and creative way is the key to mutate our messy information daily spectacle into a heterogeneous and constantly experimental scenario, which can possibly be the flourishing and liberating landscape of contemporary and future publishing.

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