THEME 1
Tensions and trends in digital culture

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It is the observation and analysis of the cultural tensions that are appearing today as a result of digital technology that can help detect the gaps from where will spring the trends of the profound evolution which the world of culture is undergoing.

In this article, therefore, I intend to identify the tensions I consider to be most significant, and to discuss the scope they may have.

REAL VS. VIRTUAL

A first of these tensions is the one that is appearing between what we consider to be real and what we consider to be virtual.

Digital technology has led to the appearance of a new virtual space. The Net is much more than a network of equipment and cables, it is the emergence of a virtual space. This means that on the other side of the screen there are properties that are different to those on this side of it. This side of it being the one we consider to be reality.

A disturbing property that is immediately evident is that of ubiquity. The Net is a space with no places. There is no distance and no delay. As a network it is planetary, it surrounds us and every node, every item of equipment, occupies a place. But as a space, everything it takes in becomes ubiquitous. Thus, if there are no places, neither are there any distances and therefore, neither are there any delays. The Net tends to be an Aleph which, while it surrounds us,

fits onto the tiny screen of a smartphone, like Borges's Aleph in "a small iridescent sphere": *multum in parvo.*

It is difficult to resist the attraction of migrating to this space with no places, no distances, no delays. Words, images, sounds... they do not need to be transported by being fixed to a material support to take them from one place to another. Will the specific containers for such transport—such as books, discs, tapes—disappear? Will libraries, exhibition, concert and conference halls be emptied along with museums, cinemas, theatres where the material objects are to be found that support words, images and sound? Will migration depopulate these places?

That the virtual have a place

The first and unstoppable trend is the migration of objects and activities to the virtual world on the other side of the screen, to a space with no places. And this produces disorientation about what will happen to the terrain inhabited by the real, and what will we do with the places occupied by material and tangible objects. And it is at this moment of confusion when a glimpse can be caught of a contrariwise tendency that brings the virtual world into the real one.

There are various indications, various manifestations, of this tendency.

One of them is to make the virtual "take place" in our real world. "Take place" is synonymous with "happen"; "occur". And something that happens always happens in a place and at a time and can therefore be witnessed. The social movements there have been in recent years in a number of countries have shown this very clearly: discontent was floating on the Net, in the social networks, and downloaded from the virtual world to the real one in the form of concentrations of people in the squares or streets of a geographical place. The event springs into being in a specific place and specific time. Cultural spaces either dry up because they are emptied by digital migration or they tend to become resonant spaces where events happen that can be witnessed (being in a place at a time).

It could be argued that such cultural events have always happened. Quite so, but today, because of the contiguity of the virtual world, it seems that places in the real world will not withstand if they do not make the most of what they have of presence (that things take place, which is to say that they have a time and a place) while at the same time being associated with the virtual world as inseparably as one side of the mirror with the other. Cultural events acquire vital importance and become the heartbeat of cultural venues. That having been accepted, the key issue is the search for, and interpretation of, the multiple forms in which a cultural event may make itself manifest. A much more extensive conception than the one we now have.

Specular duality

I have just mentioned that the contiguity between the real and virtual worlds is like that between the two sides of a mirror. Virtual worlds (dream, memory, foresight—or imagination to plan the future—the beyond) are specular, as is the digital world that has just emerged. They are mirrors which, to a greater or lesser degree, deform the contiguous reality. When people look at themselves in a mirror the image does not leave them indifferent, which is to say the image influences them and they try to intervene in it by adjusting

their posture to achieve an image that is more to their taste. The resonance between the virtual, and therefore also the digital, world and the real world is produced in the same way.

Equally perturbing is a mirror in which the objects that surround us are reflected but in which, for example, we do not appear despite being next to them, like another mirror in which the image of some object or other does not have its corresponding original on this side.

This consideration of the real/virtual duality is fundamental to understanding the broad relationship there is in digital culture between the space without places and the space in which things take place. A resonating relationship, in constant vibration between one side and the other. When this digital space did not exist, an object existed in a place which contained it and that is where it was to be found. But now that this mirror exists this object exists because it is reflected, because it is also virtually on the other side. In the same way, an object on the other side of the mirror becomes present when it takes place amongst us, which is not the same as saying "takes a place" amongst us. "To take place" implies that something happens at a time and in a place and that to witness it you must be in that place at that time. It is vital to stress the importance of the interpretation—yet to be explored and tested—of the cultural event as a way in which the virtual takes place. And, as a consequence of that, the role played, a non-exclusive role, by the cultural venues, that is to say places, for this event: ("happen: vb 1 (intr) (of an event in time) to come about or take place; occur").

> **The Net is a kind of Aleph which, while it surrounds us, fits onto the tiny screen of a smartphone**

The digital Aleph, which fits in the hand, like Borges's in a crack in the a stairs, gives us a world without distances and without delays. At the same

time its presence, its immersion, amongst us can be achieved making it take place. How this can happen (cultural happening) is one of the keys to digital culture which includes a reinterpretation of cultural venues, places. In the same way, what happens here, what is here, in our real world has to migrate to the virtual side of the mirror for the necessary duality to obtain which the recent but imperious existence of a new virtuality—digitality—demands and which is, because it is contiguous, as if we were surrounded by a mirror: if there is something real in what is set before it then it must have its corresponding virtual image. Knowing how to achieve this other virtual existence is also a challenge for digital culture.

> The digital world is a black hole which absorbs everything in the real world, but in turn, the virtual is continuously penetrating the real

If the digital world is a black hole that absorbs everything in the real world, we are also seeing that tendencies are appearing in the opposite direction such as make the virtual penetrate the real.

Augmented Reality parasitises our reality's places

One of the phenomena is that the virtual world takes place in the real one. And another, which is already suggesting itself very convincingly, is that of "giving place" so that the virtual can be seen in the real world. It is the phenomenon of Augmented Reality. AR parasitises places in our reality. It occupies objects' places, superimposing itself on them. With AR the virtual lives amongst us and in this way it achieves the immersion effect that provides presence. It stops being in a space with no places, like spirits, contained in an Aleph where there are neither distances nor delays, to become located in some place that is occupied by a material object. When there is interaction with this object somehow, by looking at it, for example, it is substituted by the virtuality that it parasitises. They are apparitions on the stage of the real that were formerly reserved for the spirits of the virtual world,

of the beyond: hallucinations, ways of dreaming whilst awake. All of them phenomena in which one of the virtual worlds we have is filtered by the gaps in reality and becomes installed there... and confuses it.

Today we are witnessing the first filtering of the virtual into the real. They are only brief shadows of convincing apparitions that will eventually become installed in reality's places until virtuality, confused with reality, lives amongst us.

Two opposite tendencies, confinement and bursting forth, create the fracture whence will spring the phenomena that will create the stage for cultural changes in the coming years. The confinement of a virtual world, the black hole of reality, in a digital Aleph that is ever more astonishing; and the bursting forth of virtuality throughout the places of the real world.

BIG VS. SMALL

In principle it would seem that the Net, because of its planetary reach, favours the big. There are obvious demonstrations of the empire of the big in the virtual world that perhaps even exceed those there may be on this side of reality, on the ground. But this magnitude conceals the effervescence of the small that is bubbling out in the digital world. A number of gigantic creations prevent a clear view of the uncountable shoots springing up from the small.

What is it that makes the Net disposed to the small? Well, the fact that it is a space without places. When there are distances going from one place to another means transporting whatever it is that has to change place. This journey implies a delay. The further the distance to be covered and the more time it takes, the larger the quantity to be transported has to be because that is the only way to compensate for the time waiting and the work involved in the dispatch. If a handwritten letter took days to arrive at its destination full advantage was taken of the sheet of paper so that it contained a text and information that merited the act of sending it. The speaker at a

conference and the audience have to travel and spend time getting to the conference venue so the speaker's address will have to last an hour to make it worthwhile attending. The same thing applies to a roll of celluloid with a film, a work meeting, the printed words transported in a book or an album of music contained on a disc. And this observation applies not only to the transmission of the information and access to it, but to any form of transport. When there are no distances nor delays in either transport or access, when everything is in a digital Aleph and can be held in the hand, the size of the packets of information are smaller. In the same way, it is possible, when people are together in the same place and at the same time, to have a conversation on the basis of exchanging short messages but it is impossible to have these short exchanges of information, which constitute a conversation, between an astronaut travelling close to Saturn and his control base on Earth (the delay in the transmission of each message is one hour and ten minutes). So both the astronaut and the control base must keep in contact with larger packets of information. It would be absurd to send a greeting and wait for another one in reply followed up by a brief phrase and so on continuously.

We associate big with extensive, which is a way of getting over the problem of distance. And we associate small with reduced, that is to say, constrained by distance. When there are no distances big or small are not determining factors for a beneficial installation in this space.

A world in parts

A space without places helps bring about another order of things. The phenomenon that can then be observed is the granularity of the Net; a tendency towards the small. And its interpretation poses another challenge for exploiting the properties of digital space.

Growing granularity runs the risk of crumbling apart and this will happen if what is small is as closed as marbles. These marbles may be made of coloured glass or clay, but they can only be together in a bag.

It is different if granularity produces fragments since they can be fitted together to recompose the whole whence they came. But the most fruitful kind of granularity is that in which every grain, every unit, is a piece—a piece of Lego. Fitting them together one way or another they can be recombined to produce different shapes. Fragments only make recomposition possible while pieces make recombination possible. Fragments produce a single result, pieces produce multiple results.

With the analogy of pieces we can express the concept of the small and open as a building material in the digital world.

In the space without places everything tends to crumble. The phenomenon of the small appears where it

A space without places promotes the granularity of the Net where fragments, like pieces of Lego, are combined to obtain different compositions

would be believed that there are only conditions for the big. On the basis of this granularity the challenge is in the conception and design of elements which, like pieces of Lego, can be recombined. Then the small achieves its potential for also being open. Small and open. In each case the interpretation of the concepts of small and open is key for the exploitation of this phenomenon of digital granularity. Escaping the crumbling away and fragmentation will be a creative task over the coming years. Objects or activities erode if we atomise them into small, closed units. Neither is it a solution if they are broken into fragments, although they can be used to recompose the original. The crucial thing is to conceive of pieces—small but open entities—that can be combined in many ways in which each combination produces a different composition.

Where will this tendency towards a digital world of uncountable pieces in continuous recombination lead? In principle it could be argued that it will lead to an intensification of interaction. People are going to find a digital world in bulk as well as digital

objects that can be taken apart, not fragmented (which entails breaking a unit). And people will choose the pieces in bulk and will extract others from these objects in pieces to make their own combinations with them. Formats of activities and closed, inalterable, preserved objects, will give way, either because of their own material condition or because of the protection of regulations, to works that, because of the way they are conceived, will be capable of having their pieces extracted and recombined amongst themselves or with others obtained from the bulk offerings.

This recombination will also propel cyberdiversity (when biodiversity on this side of the mirror is in decline). Until now distance fostered cultural diversity since it isolated communities in places distant from each other enabling them to have their own cultural evolution. The transport and communications revolution is ruining this way of producing cultural diversity. But, contrary to what has been believed, in the uniformity of the big in the space without places, of digital space, lumps of the small appear to be resistant and they alter the possible homogeneity. And because the small is also open the capacity for combinations of components has rocketed, components which, outside of the virtual space would have distance and delay as almost insuperable barriers to find each other and fit together.

> **The Net is fraying due to obsolescence and combats this with innovation, which in turn comes into competition with what has already become established**

The duality created by the real world and the virtual world explains this constant resonance between both sides of the mirror. The small and open that emerges powerfully on the virtual side has repercussions on this side, the real, and this is what has led to formats and ways of doing things, which until now have been accepted, being changed for others which are in greater accord with what is happening on the other side of the mirror. In turn,

the specular presence of a new virtual world amongst us, the digital world, leads to efforts by the real, the tangible, the material, all that is subject to distance and delay, that may be hundreds or even thousands of years old, to be reflected somehow in the virtual world. If that were not the case, the question would be asked how is it, being inevitably in front of the all encompassing mirror, that there is no reflection? So, knowing that the other side of the mirror has different properties, what will the virtual version of every real thing that migrates be like? It is a fascinating journey of discovery, only a short stretch of which has been covered.

Nothing stays still

Another experience with the small in this planetary space is similar to the 19th-century experiment carried out into pollen suspended in water by Robert Brown. While we may have the impression of the Net as an immense storeroom it can be seen that it is all in a constant flow of ones and zeros, in all senses and in all directions. A microscopic view of the apparent stillness of everything that migrates from the real world to become installed in the digital medium reveals great agitation. The Net is not a container where, like shelves, packets are stored or where books are kept as in a library, but is where the content, at the scale of ones and zeros, is suspended and subject to Brownian motion. If this motion ceases the ones and zeros become sedimentary dust. Information, the digital object, is not lost but becomes buried under this sediment and as time passes, like archaeological remains, its recovery becomes more improbable and difficult.

This state of suspension in the digital space, this Brownian motion, is achieved when things are accessed, shared, replicated, withdrawn, taken apart, recombined, if there is continuous activity with them. Only in this way can persistence in the digital world be understood because stationary conservation, such as is possible with material objects on this side of the mirror, is a vain hope that becomes buried under a sediment of ones and zeros.

The motion of digital entities is never ceasing because they can not find any place for repose, an impossible aspiration in a space without places.

Furthermore, there is another Net phenomenon which provokes this movement, even of that which is most inclined to remain stationary, the fact that the Net is fraying. The cause of this weakness in the mesh is obsolescence. It only seems like a weakness because it is due to the vitality of innovation. Hardware and software are starting to show malfunction, not because of wear and tear, but because of the appearance in the artificial ecosystem of innovations which are coming into competition with what has already been established, and in such a way that even that which has been maintained on the Net with the intention of storage and conservation has to move sooner or later under the threat of obsolescence, of being lost, clung to the Net's frayed threads.

Orality

A tendency can be detected in the digital space towards orality. It might be thought surprising that such a powerful technological medium, one that provides ubiquity to everything it contains, is incapable of guaranteeing its permanence. The strategies for digital persistence are similar to those of orality. The strings of ones and zeros are as fleeting as the air of the spoken word. In oral cultures the way to persist and create memory, the way to resist the passing of time, is repetition. Conveying again and again whatever is to be maintained—insistence as persistence. Something is transmitted orally and to prevent it from being lost it has to be said again or for whoever has heard it to communicate it to others in their own words. Repetition and reverberation are the safeguards of memory in oral cultures. Notice that oral communication is composed of pieces like the digital ones we see in digital communication. Discourse in oral culture is built from pieces each of which is repeated on later occasions under different circumstances, recombined or in combination with others, as other oral discourse. The same things are always told again in a different way. It is, therefore, a way of ensuring persistence through insistence. If the

parts did not have this capacity for combination the only possibility would be to literally repeat what had originally been said. On the contrary, each part, each piece, which is not just a fragment, is saved from the passage of time by combination with others in a new situation and at another time. It is not plagiarism nor alteration, and neither is it fragmentation. The key to persistence in the digital world resides in everything being built from the small (pieces) and being open (recombinations). The challenge lies in the interpretation of this key for every specific case.

Expanded there and now

Presence implies a here and now; a space-time coincidence. When something artificial mediates, such as, for example, a sheet of paper in a letter, a page in a book, a canvas or celluloid, the perception of space and time becomes one of there and then. What we read, hear and see through a medium was produced in another place (there) and at another time (then). Electronic media

> **The prints we leave behind in the digital space repeat themselves and recombine to trace an image of our personality which is like a reflection in a mirror**

can give us the experience of a there and now when there is live transmission. We are not in the place but it is happening at this moment in time. However, when we are surrounded by the mirror of digital space, things in the real world where we are, and we ourselves, find ourselves neither here nor there but somewhere in the middle, somewhere close, but on the other side of the mirror. We cross this barrier when we duplicate ourselves through the phenomenon of specularity: an image of ourselves, today still a blurred image but a recognisable one, appears on the other side of the mirror. We find the perception of our image there disturbing, just as our images in mirrors were that have inspired countless stories and myths in all cultures, or images captured by cameras which in some cultures even today lead people to cover their faces. Today it is the image that appears when we sit in front of a screen, the

digital space. It is a reflection, an inevitable duplication. Pretending that it is not there is like trying not to leave a footprint in the sand when walking on a beach. In the digital world the grains of sand are ones and zeros and any action of ours leaves a trail. In the same way that looking at the prints on the sand of a beach tells you something about the person who left them. This one was an athlete who has run the length of the beach; this one stayed stretched out and hardly moved; this one went swimming a lot; this one met up with other people, and so on. The prints we are constantly leaving in the sand of ones and zeros are what trace our image in the mirror. It is a phenomenon that will continue increasingly, and the mirror image will become sharp. This is the result of the evolution of the digital world itself because it is not possible for it to continue growing as a megalopolis without its districts becoming delimited at the same time; that is to say, those environments to where each people again see things and are themselves recognised. In this way the immense space becomes tailor made for people, it becomes an environment, it presents itself according to their needs and within their reach.

If we recognise ourselves on the other side of the mirror and other people consequently identify us, simulation will emerge as in any other social relationship on this side of the mirror where we are. A feeling of presence will arise—it can be felt already—in the virtual world, based on our image being there and things happening now in an expanded now. The ephemeral nature of the Net, the tendency towards orality in the digital world, make time seem like an expanded now, that is to say, something that is happening there, where our image also is, but which reverberates in digital space for as long as it is repeated, reconveyed, recombined.

NATURAL VS. ARTIFICIAL

We are *homo faber*, but we struggle to accept what we make. We are indefatigable builders of artefacts and with them (or because of them?) we evolve and they become indispensable because, without them we would find ourselves defencelessly naked.

Nevertheless, the artificial—that which leaves our hands connected to our brains, the result of something so human as imagination and abstraction, communication and memory (personal and collective memory, in other words, culture), without which it would not be possible to make even a biface hand axe—does not receive the appreciation it deserves. We continue with the myth of the return to Paradise, of believing that nakedness, the shedding of everything artificial, will lead us to a better state. We understand that the artificial is only a burden on the road to expulsion, but that, by nature we should be free of this artificial baggage. When another artefact arrives in our lives we look at it with suspicion, if not with contempt, as another intrusion that deprives us of another slice of our humanity.

Such convictions leave their mark even on our expressions, and so it is that we say that something or someone is natural, and we do so to emphasise a positive value, such as simplicity, the purity of things, sincerity, empathy with people. We value natural food. And we even construct arguments of moral rejection claiming that this behaviour or other is contrary to nature.

> **Digital prostheses bond the virtual world to the real one, it is not a question of limiting their access to cultural venues, but of providing them with a good environment**

The artificial, however, is to culture as the body is to genes. Genes travel in time and space protected in constructions with proteins which are the bodies—countless machines in continuous evolution, innovation and obsolescence, of all shapes, the fruit of infinite trials—within which the genes live. Culture has a similarly close relationship with artefacts; they are its bodies made, not of proteins, but of stone, metal, plastic and so forth. All cultures produce their bodies, that is to say, their artefacts, and they are inseparable from each of them. And if human beings have always maintained this opposition, the source of religions, between spirit and body, and the hope that the spirit be liberated from the bonds of the

body, in the same way they see their nature suffocated by the artificial, which they produce.

The passage of time is the way by which something artificial acquires the category of something natural, just as immigrants or their descendants can, with time, be regarded as natives of a country. We forget the artificial origin of something that forms part of our lives so that it seems natural. We speak of natural food, without chemical fertilisers, preservatives and nontransgenic produce when agriculture itself is the artificial intervention of humans in nature, but one that took place thousands of years ago. It seems natural to us to read from a book, but we have struggled to accept that reading from an electronic screen is too. In a technological culture, with inflationary innovation, the artificial avalanche heightens the sensation of unease and disorientation.

In spite of everything, the dissolving of the border between the natural and the artificial is speeding up on account of the ebb and flow produced in the human being. There is a continuous extraversion of our nature in artificial creations. It is a tide that has been taking anatomical functions away from us such as punching with the fist, scraping with the nails, piercing with the teeth, ever since we made a biface hand axe, a scraper or a punch. We have passed over to machines the expenditure of energy required to accomplish tasks which previously consumed our calories. And we have passed on our skills to robots, from the mechanical loom to the industrial robot. Memory we have passed from the written word to the Net and we are trying to give computers intelligence and feelings. In the opposite direction the artificial enters the realm of the natural, the body, in the form, and this throughout the ages and in all cultures, of tattoo ink and also piercings, prostheses, implants, transplants, chemicals in medicines, stem cells. So we have a *homo extraversus* and a *homo proteticus*.

Homo proteticus

The evolution in computing has been, and continues to be, astonishing. Just seventy years separate the

smartphone from Colossus and the ENIAC. A whole room to house a calculating machine and the palm of a hand to hold a digital Aleph. And that is where we come from, via a breathtaking cultural and technological evolution. Implosive miniaturisation (a quotient between features and volume), ergonomics, consistency (the absence of special maintenance), the cost of acquisition, all these confer the invisibility and adherence of a prosthesis. The digital world, the virtual, specular world, is already a prosthesis. The cultural consequences are obvious, and this is just the beginning.

We have been asking here how the representation of a digital world as an all encompassing mirror of our reality would make itself manifest. With the concept of prosthesis that question is resolved. The tablet, the smartphone or the phablet, or folding screens, spectacles, bracelets and other forms of prosthetic device mean that the two worlds, the virtual and the real, have the contiguity of the two sides of the mirror and that the view from one to the other vibrates constantly. We look at the world on this side of the mirror, and do so without interruption on the other side, and then back again to this side, and so on continuously resonating. A duality is thereby established in these prosthetic beings that must be borne in mind when arranging and showing the material world, and also with regard to prohibitions. Following former criteria of preservation, how can limiting access to cultural venues or places for these prosthetic beings be accepted? How can an environment be provided for these beings who are equipped with this ability for perception, this ability to interact, this duality so that they do not feel as if it is a fossilised stage, something alien and strange, and take refuge on the other side of the mirror?

Explosion: the digital world that is emerging is an impressive display of the extraversion of the natural capacities of human beings in an artificial world and of its ensuing amplifications. Implosion: and at the same time a contraction of this world to the point of becoming a prosthesis.

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