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Art and Inclusion "meta-digital": Uncovering electro-digital art?

Abstract:

As we are entering the XXI century, everything may seem to have already been said about the emergence of a new esthetics at the frontier between art and technology. Virtual reality, cyberspace, net art, interactive art, robotics etc...are now common presence in cultural mass media. This however may only be na appearance. When it comes to its broad social impact, the problematics of art and technology may only barely have begun.

Some of us can remember that post mid-XX century "futurology" predicted a passing of the millenium flavouring a mutated world of new infinite energy sources, a clean, transparent world of glass-like, aerial mobility, interplanetary transportation, phenomenal improvements in health, education and well being for the world. We can now see that little of this took place but that, instead, some extremely significant developments were achieved that were not predicted: among them the concretization of moore's law into a staggering development of computing power and the emergence of the internet as a global cultural space. (1 - manuel castells) At the side of this we can witness enormous fragilities, massive pollution, fragmentation of local cultures, extreme inequalities in the capabilities for participating in value production.

To orient ourselves in the labyrinth of contemporary interrogations, It is useful to reinterpret broad cultural evolution in the light of one fundamental parameter: global human population, and to meditate the sistemic transition blatantly perceptible in the shape of the world's demographic curve. At the very moment of history when absolute human population makes its steepest increase we observe the two simutaneous facts:

One, culminating a broad multiseclar espitemological movement of analysis, of "reduction" of bulk experience to predictable laws, human practice is integrating the notion of "elementarity" in all realms of activity: elementary particles, bits, amino-acids, minimal art, data objects, generative grammars, norms, reproductibility etc... The combination of elementarity, mathematical modelling and the fundamentals of digital computing are opening up wide new realms of perception.

Two, At the same time that this generalized "elementarity" combined with rapid increase in computing power is setting the base for a new, "generative" epistemological trend, we see appearing in a very short time a billion or more of "computational nodes", connectable PC's, celular telephones, microprocessing nodes, programable electro-digital blackboxes of all types, adding themselves to the already dominant presence of mass media of the first type like radio, television, telephone.

The combination of these two facts has induced a phenomenal increase of communication and perceptual stimuli. Using a metaphore from physics one could say that Culture is undergoing a "phase transition" from a state of low density to one of much, much higher density. This transition is inducing the apparition of a wall-like "shock-wave" of complexity. The anarchic proliferation of signs in Post modernist times could be interpreted as a fragmentation of language and interpretation against this "wall" of man-made complexity. The episemolgical trajectory of mankind must refract through that wall into a new, computationally intensive, "generative" direction.

This represents the developpment to its ultimate consequences, of the assimilation of analytical mathematics as introduced in the early stage of this transition by XVII century mathematicians like Newton and Leibnitz, when tools to describe space and time quantitatively at any scale made irruption in the human language. In this context, the cultural horizon of the XXIcentury my well be

that of real-time perception at the molecular scale, paving the way for another "sistemic" transition, arising as an echo to the shock of the previous one, but this time related to the exploration and the "assimilation" of biology at a fundamental level. human language emerges through a slow linear process spanning over a million years. The brutal transition that is manifest in the global demographic curve, occurs over less than two centuries. with its major impact over a few decades. how well are preparing ourselves for such an extraordinary impact?

What clearly occurred between the apparition of the first personal computers and the explosion of the recent years (over a billion "computational nodes" installed) is that the mass media based on these technologies have tried and, in a large measure, succeeded to maintain it hidden into the closed "black boxes" of consumer electronics. The technology had to be invisible. What mattered was "information". The physical gesture of "homo faber" was becoming culturally obsolete and the secular tradition of "studio art" were marginalized into "arts and crafts" and personal therapy. The "avant-garde" of art that had already moved into "non-retinian" conceptual art, could shift quietly and effectively into graphic design, net art, interactive art, cyber art etc... as a formalization of mass media.

By and large Graphic design and black-boxed computer labs maintained a nearly complete hegemonia upon the association of computers with art in the imagination of a public deprived of any access to the nature of the fundamental media underlying these technologies.

What is fundamentally mutating, through the current "sistemic transition" of human culture is our level of perception of matter, moving from a "direct" perception mediated through our five senses, to an "indirect", machine-mediated, model-extended perception where traditional operations of craftsmanship on bulk matter are giving way to a central relationship between "bits and atoms"(2 - Neil Gershenfeld). The problem is that operating at this new level of perception requires the assimilation and the concretization of new vocabularies, of a culture of measurement, whose transmission to the social fabric at large, has been poor or nonexistent, given the extreme velocity of the transition, leaving a very large mass of people excluded from the capacity to perform the tasks and the "gestures" of major added value production. Marginalized economically as well as culturally.

A simple glance at the world demographic curve and a return to XX century "futurology" may suggest that a very important challenge for Art could well have to do with contributing to the transmission, the "mise en scene" of these vocabularies, of all this basic knowledge that the brutality of the transition [1980-200] did not allow to transmit to the social body at large. How do we make artists capable to not only consume and comment or speculate over the latest, but also to contribute positively to the uncovering and to the critical interpretation of the fundamentals of electro-digital technology?

A remarkable and little attended aspect of this transition is that it is producing not only a large group of marginalized, discarded, disconnected people, but also an enormous and rapidly growing mass of electro-digital refuse. A mass of man-made material complexity of a new type, whose pervasive abundance already gives it the quality of the "natural" materials customarily used by "traditional" artists. This landscape of dead hardware contains, however, much more than its physical elements, much more than economically disfunctional refuse: It also contains, implicitly, the considerable "added value" of the knowledge, the skills and the "gestures" that are required to make it functional. Dead matter saturated with the "frozen knowledge" covering all the fundamentals of electrodigital technology.

An interesting characteristic of the first "wave" of digital refuse is that it maintains a level of accessibility (chips with "visible" pins, pcb with pinholes etc...) that is compatible with simple, traditional craftsmanship. This will not be the case with the next generation of hardware, whose large scale integration and miniaturization will make the cost of their manipulation much higher.

Once expensive components, these parts are now completely devaluated because evolving market conditions made them obsolete. Older computers reassembled as "open architecture" controlling devices, desoldered first generation static memory chips, motors, simple logical circuits, connectors, sliced holed pcb, transistors, capacitors, etc.... , instead of being destroyed for simple minded recycling, could constitute the medium of a possible "transmission" to much larger social segments , at a sustainable cost, of the culture of research, of the vocabularies sustaining the technology of new media, an introduction to this realm of "bits and atoms", to the psycho-motricities and integration of skills and knowledge that are needed to make them funcional. Reinterpreting them, not as "products" made to compete in the market, but as production of symbolic value i.e as "art". And allowing by the same token a necessary reinterpretation of "gesture" in the new digital-virtual context. (4 -- pierre levy)

A careful examination and pre-processing of discarded elctrodigital refuse and old computer parts by mixed groups of art, architecture and engineering students working together in suitable curricular context within universities and connected to the social fabric of art communities at large could provide the seed for such a development. This is the work that we have begun to do in the TAP (taller de arte y programacion) at the school of engineering of the UDELAR-Montevideo, involving hundreds of students into a curricular experiment focused on circulation of skills and knowledge, collective intelligence (4-pierre Levy), and open to a wide mix of students of all disciplines and level of acheivement.

Bibliography:

Manuel Castells	The age of information vol-1
Neil Gershenfeld	When things start to think
Pierre Levy	Qu'est que le virtuel?
Pierre Levy	Collective intelligence

Biography:

Born in Belgium, Etienne Delacroix is a visual artist who holds a Phd in Nuclear and Particle Physics from College of William and Mary, Virginia, USA. A substantial part of his life spent in a painter's Studio in Paris has been dedicated to explore the impact of computation on traditional painting practice. His work mixes painting, drawing, software development (morphems) and reuse of low-tech electro-digital refuse (low cost modular electronics). Visting Scholar at MIT. Professor at the Institute of Electrical Engineering of the UDELAR Montevideo, Uruguay, where he coordinates the TAP (Taller de arte y programacion) and develops methodolgy for low cost mobile computer workshops (Nomadic Workshop/Oficina Nomade) aiming at producing sustainable interfaces between engineering , art and the challenges of digital inclusion.