

# THE CHANGEABLE PLACES OF THE DESIGN KNOWLEDGE.

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The industrial age, mechanized and characterized by the separation (if we think at the assembly idea behind our products or at the separation of knowledge in the education), is leaving the way to new balances between the society components according to their cultural parts.

It is undeniable that the omnipresence and the consequent computing integration is changing the condition of part of the humankind, that has a series of new parameters in order to build a new kind of design theory.

The diffusion of the "digital industry", that is to say of the processes that use tools and equipment controlled by computers in order to make objects, are completing the Alvin Toffler prosumer role (1970,1980), it basically continues the change already begun in the publishing industry with the blog, where the user have had the possibility to change role from consumer to producer.

We have recently started to make some trials in the production of our customized products, and this process will increase as we will cut down the walls between the idea of the product and the making of the product itself.

This is very exciting side that refers to a real material digitalization (Gershenfeld, 2012), it retraces in a way what happened from the analog communication to the digital one.

The fact that the production is leaving the institutional places like companies and laboratories, becomes evident and sustainable (of course not in every case) in the product design sequence.

Recently we see also an opening of the architecture to these issues, by transferring open source themes to the building world. For example the DUS Architects are working on a project of a 3D printed house, the interesting thing is not related only to the technical issue, but also to all those issues regard-

ing the common problems of building: "... architects are very fascinated by the mere technical opportunities that the machine offers, but we're fascinated more by the open source democratic idea of these printers. It democratizes architecture."

They describe the process as an experiment constantly growing, where the potential is the audience involvement.

The blog is a platform where the products are available in order to be freely tested or transformed by the audience, that from observer becomes actor of the experimental process.

The system "simplification" allow to not-professional figures (in the architectural environment) to have access to the system itself.

The interesting point is this de-professionalization where the reference loses its meaning in favor of a common organization, represented by "contributors" and so governed by totally different dynamics (Shirky) in comparison to the "bureaucratic machines" that guarantee the knowledge preservation or better to say of a certain kind of knowledge.

We can find a first step toward this transformation with the software at the beginning of the 80's, these software have freed the designers of the link to work with computer technicians (graphic, design and modeling software)

In the following years this transition has created some problems.

One of these problems is related to the professional role in the creative world, it makes people believe that competence is limited to the use of an instrument, forgetting the cultural aspect that is behind this knowledge and the possibility to grow.

At the same time it has contributed to shape the behaviours and consequently the products.

The software have partially become the knowledge

guardians, because specifically defining the activity for which they have been designed, they determine also the intellectual action.

Nowadays many software have different tools, libraries that can increase the basic platform that has become limiting.

The creation of these extensions is the free expression of a community where there are people that act as pioneers, building a new aesthetic and functional language that is then supplied to the others for changes and adjustments.

The limit of the behavior control, is deduced also by the apparently naïf experiences in the website, the algorithm designed for this or that purpose are our typical experience in it: the website is an algorithms tank that give shape to our behavior.

The control, that is the real structuring power of the algorithm website, is the result of two intrinsic elements that lies in its mathematic origins: they are complex negotiating system between Automation and Decision (Jackson, 2013).

They are inseparable elements if you want the algorithm to work no matter the purpose that is programmed for. The automation side refers to the ability to transform a theoretical procedure in a "real" one.

An algorithm has to be designed also in order to decide according to a particular input or according to a particular result, evaluating a series of different alternatives.

A good algorithm is a combination of both elements, where you automate the decision, as is it was done by the user itself, if for example the case is the one of a book research in an on-line store.

We always have to remember that they are abstract structures (at least in their origins), they are a reality representation and so they represent a check tool of the reality perception.

When this reducing reality view is compatible with our existence, it becomes reality, a reality where

there is obviously a loss of freedom, a reality that is equivalent to the project ( that is for definition a simplification act ).

A coherent target of this collective model is the skill to define its own abstractions by changing the other's abstractions.

The open tools, not the institutional ones (as for example the software companies in the technical field or the school in the cultural one) allow to build an actor who is able to define his own technical tools and to share them with others in order to be changed.

But where is the cultural form located? Are we going toward a future where the technical language (the one of software) will absorb the cultural one (the one of intentions and aims)?

*Toffler Alvin, Future Shock, 1970*

*Toffler Alvin, The third wave, 1980*

*Shirky Clay, TED talk [http://www.ted.com/talks/clay\\_shirky\\_on\\_institutions\\_versus\\_collaboration.html](http://www.ted.com/talks/clay_shirky_on_institutions_versus_collaboration.html)*

*Gershenfeld Neil, How to make almost anything, in Foreign Affairs nov/dec 2012*

*<http://www.furtherfield.org/features/algorithms-and-control>*

*DUS architects - <http://www.wired.co.uk/news/archive/2013-06/04/architecture-and-3d-printing>*

*Jackson Robert, Algorithms and Control - <http://www.furtherfield.org/features/algorithms-and-control>*