

Relations within the home system

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# INNOVATION IN DESIGN EDUCATION

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# **INNOVATION IN DESIGN EDUCATION**

*Theory, research and processes to and from a Latin perspective*

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## RELATIONS WITHIN THE HOME SYSTEM

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The actual production model, is largely ruled by the need of volume maximization.

Basic requirements for the survival of this model are the uncritical consumption and lack of interest to sources of raw materials for production.

Even in household appliances market we see how this linear model is so rooted, with a typological supply reduction, that doesn't take into account cultures of territories.

In order to transform the current "home product" into "home system" the starting point could definitely be the food: changing the perspective in which we consider food will consequently change the appliances too.

Actually the connection of house with context is only water and energy supply, while the processes that regulate food and products have no real and deep connections with the territory. Globalized food passes through houses and it is processed by standardized household appliances.

The distance that stands between food and context where it is consumed are:

- *Physical*. Food is cultivated far from consumption area;
- *Temporal*. Its consumption is independent by seasonality and expiry times;
- *Cultural*. It is completely disconnected from the tradition, cooking and conservation practices;
- *Commercial*. A lot of economic intermediaries stand between producer and consumer.

On the contrary if we see food as a result of interrelated processes linked to the territory, in the same way we could design appliances connected to each other, deeply influenced by the context where they are located.

The "home system" is the design area where we can apply this shift, considering inhabit as a network of relationship between subjects, appliances, architecture, behaviors, food and products.

A result of this production approach is the consciousness of people that make choices and become active subjects; they are aware of the consequence that their actions have on the system where they live.

This vision brings not only more healthy and conscious lifestyle, but it leads to a co-

evolution of the three actors of the system: companies, production and territory, instead of bloody competition we see today between them.

••• Systemic design, components, food, health, territory, water,  
energy, house, subject, user •••

The goal of this paper is to show how an approach based on knowledge and awareness can lead to a positive change related to the environmental and economic crisis. This bottom-up change operates on the global consumption, which is the actual economic model, to reach good effects on wellness, shared wealth, environmental and ethic sustainability.

#### ECONOMIC CRISIS AND ENVIRONMENTAL CRISIS

At least from the second half of the last century, the international scientific community was able to document, with an increasing deepening, the dramatic effects that the continuous and unceasing behavior of human kind wield on natural systems to satisfy his needs.

The fragile balances of the natural systems are put to the test from at least two centuries and an half (from the beginning of the Industrial Revolution). The stress upon the nature by the man is so strong that geologists use an informal geologic term to describe the period we are living: the *Anthropocene* period.

This is one of the evidence that scientific community knows very well the destructive effects of our actions against the ecosystems, so that we can compare these effects to the big geological dynamics that shape the life of our planet.

In the last “Living Planet Report 2010” published by WWF, it is described the state of the art of the ecologic footprint of countries, and once again it shows that we are collecting an increasing environmental deficit.

International scientific community describes every day the effects of our impact on natural system of the Earth, that still remains the only source we have and that is the base of entire world economy and our wellness.

The actual economic and financial crisis is a huge and serious problem, but our ecological deficit is much more worrying than any other crisis we went through, and the environment problems are most of the reasons why the economic crisis has risen.

The worldwide economy has grown with a terrible rhythm within the last sixty years. The gross world product (GWP) reached 69.000 trillion dollars in 2008, and already that year, there was a soft deflection in the annual growth rate, due to the current economic crisis. In 1950 the gross world product was only 6.600 trillion dollars, and since then, in sixty years, we have almost tenfold. It’s foolish to believe in a continuous and relentless growth of the gross global product, also because if we open our eyes, the reality that surrounds us has very obvious limits.

The economic and environmental crisis are two aspects of the same phenomenon. As

pointed out by economist Jean-Paul Fitoussi, “at the centre of their perverse functioning there is the same ethical problem: the preference for the present, and its corollary, the depreciation for the future. In this tension between long and short-term it’s narrow the deeper connection between the financial crisis and ecological crisis.”

We are thus faced with a crisis of the System, which is a clear symptom of the unsustainability of endless growth, that is aspired by the economic and financial approach that we continue to adopt today we are unanimously witnessing that the development system, which dominated previous decades, is very precarious.

Contrary to our economic model, all the Earth’s natural systems can renew themselves and generate life. That is why the ecologist Eugene Odum (1913-2002) called them “life-support systems”.

Our dominant culture leads us to neglect, and often to ignore, the processes and functions performed by natural systems, and each time we use them for our welfare, weakening or damaging their resistance and resilience, we difficulty understand that doing this we are reducing our chances of development for the future.

As ecologists have shown us, humanity is closely dependent to processes, features and services that natural systems provide to us.

The health of humanity is therefore closely linked to the health of ecosystems and biodiversity, which are the basic constituents of natural systems.

As humans we are also a component of natural systems: without them we would not be able to evolve, and we will not survive without these.

The man is heavily altering the functioning and diversity of planetary ecosystems, this is reflected in a significant impact on wellbeing, economy, wealth, and happiness of society and therefore requires urgent and concrete actions to reverse the trend.

The challenge we face today has very significant proportions and the only hope we have to win is to involve everybody, starting to work from the bottom. It’s about understanding how current 7 billion of humans can live, and, since the number increase (there will be at least 9 billion by 2050 according to UN estimates) to guarantee them an appropriate lifestyle without causing the continuation of the devastation of natural systems. In order to do this we must seek to radically change our consumption model, that today needs to be continuously fed and generates all the problems described so far.

## THE HOME SYSTEM

If we analyse closer our research field, so that it’s possible to operate in a more tangible scale, it’s possible to identify two closely related views: *System Home* (space where the man works at the individual level) and the *Territory system* that surrounds it (the space where man relates the collective level).

Currently, these two horizons don’t have much in common, except for the unconditional exploitation of resources, both far and nearby, in order to ensure a welfare based on eco-

conomic growth without end.

Our goal is to identify guidelines for design, applied to the large scale production of tools, that will contribute to change human behaviour, by favouring the evolution of the only consuming model which can preserve a future for our planet: the *environmental sustainability linked to an ethical wellbeing*.

A fundamental characteristic of our design methodology is to consider the man as an active part of the natural system. This brings to consider Man as the centre of the project, in opposition with the mainstream approach that considers the Product as the centre of the project<sup>1</sup>. A particular attention is paid to the conditions that determine the well-being for man, both for the healthy condition and the emotional serenity.

One of the most important environments for man is the house. In this place, more than in others, is expressed the way of life we really lead, with its consumption and aspects of everyday life.

If we analyze the home condition with the critical approach borrowed from the Systemic Design methodology, we can find a variety of issues and problems that can be improved and that gives us the chance to trigger the requested change.

Within the domestic context we can find many of basic needs that humans have in life, one of these, without a doubt, is the need of food.

To take advantage of the “*food resource*” in order to satisfy our basic need, we involve several other resources (such as energy and water), occupation of spaces, use of tools (such as household appliances) and implementation of specific actions.

This creates a dense network of relationships and flows of resources within our context that we can define without doubt “*Home System*”.

Just for the origin of the resources that we use in the house system it should be related with what is around: the *territory*.

In this case, the network of relationships and flows of resources widens considerably, but if you proceed slowly moving away, we see that the area surrounding our home system is just another system which interacts with it right through these exchanges.

In our model, the Home System and the Territory System are *open*, and are made of a network of relationships that extends its scale and that can expand more and more involving systems that are near and it is convenient to have a comparison.

This model with which reality is reconstructed, according to the Systemic Design approach, refers to natural systems. In nature, all the flows imply a *continuity of movement* without barriers, and the fundamental condition because what happens is their valorisation so that there won't be any waste to dispose, but each flow finds always its location and its usefulness. A natural system is always designed in terms of its flow and its evolution will always go in that direction. There is nothing that is evolving in a static way, all interact

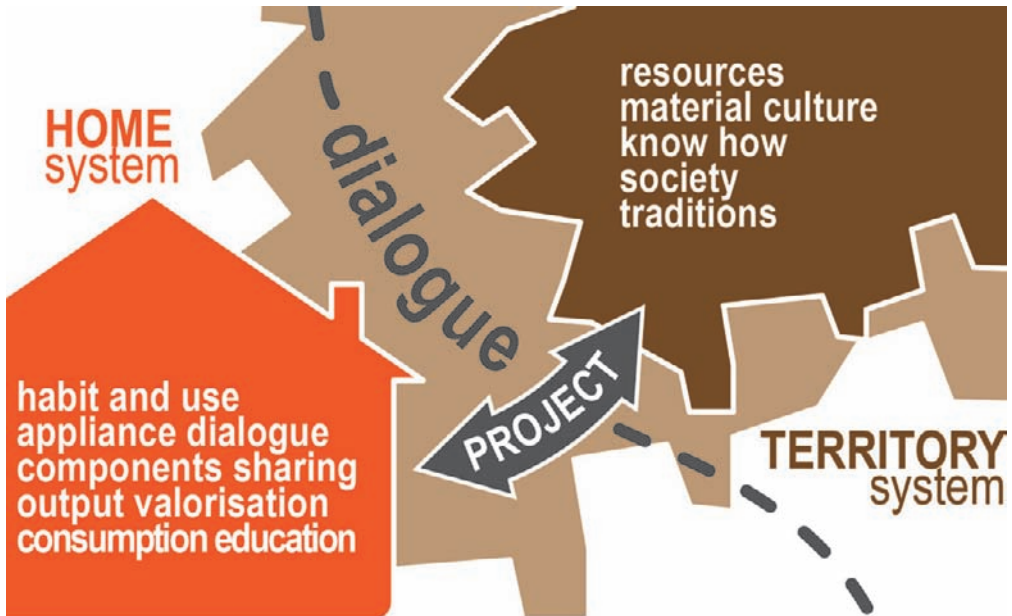
<sup>1</sup> Luigi Bistagnino. 2008. *Uomo al centro del progetto, design per un nuovo umanesimo*. Torino. Allemandi & C.



with what is around to reach a single purpose: the self-organization (or the autopoiesis in case of natural systems)<sup>2</sup>. By studying these aspects in depth, you can discover a wide variety of connections that can coexist with the most diverse phenomena and targets.

If we intervene in the domestic sphere with a systemic approach applied to the project, there must be taken into account the requirements that the design of products such as appliances have, and all the behavioral aspects that come into play referring to man.

The product at this point can be considered as a *system of components* that relate to each other with the aim to perform a function, using resources and creating connections with other tools or with the user.



By focusing our attention upon these smaller scale areas, such as appliances, and gradually expanding until reaching the home system and the territory system that surrounds them, we will organize the flow and the relationships such as energy, water and air, trying to optimize them and exploit them in order to maintain an overview of how performance goals and functions to accomplish.

The result of this design approach will be the dialogue between these actors, which are

<sup>2</sup> The term autopoiesis was coined in 1972 by Humberto Maturana, from the Greek word for *auto*, that means “self” and *poiesis*, that is “creation”. In practice, an autopoietic system is a system that continuously redefines itself and inside it sustains and reproduces itself. An autopoietic system can be represented as a network of processes of creation, transformation and destruction of components that interact with each other, support and continually regenerate the same system. Moreover, the system defines itself: the domain of existence of an autopoietic system coincides with the topological domain of its components. (Maturana, 1973)

<sup>3</sup> We consider Subject as an evolution of the *prosumer*, described by A. Toffler (1980, Toffler)

linked each other also on larger scales, strongly characterized by the context in which we find ourselves.

**SUBJECT NOT USER**

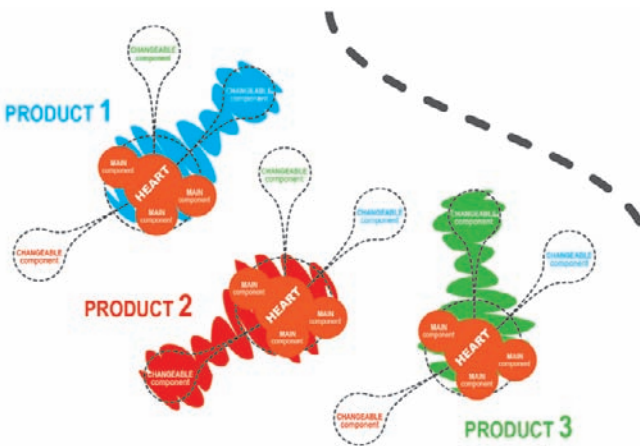
The project itself is not enough to satisfy the needs and to make the system work properly. The fundamental importance is the man with his habits and behaviours, his choices and actions that he takes. To set in motion the mechanism that will bring us closer to a new consumption model the active role of people will be very important: the human is considered as a *Subject who think and is conscious of the consequences that his actions can produce*<sup>3</sup>. This growth in the role of consumer allow the Subject to perform the actions in full awareness during consumption and to be free from the passivity that characterizes the *User*, who uses or consumes something in a unconscious manner, just because it is easily available.

In doing so the man at the centre of our project takes off the *User* mask, dressed up to now, to wear the one of the Subject; he will begin to decide what to do with critical sense and he will leave a behaviour moved by habits, by the comfort and lightness.

The advertising and marketing have always focused their attention on this habit of unconscious behaviour, giving rise to reference groups to analyse and to fit the design: the so-called “target”. In this way the features have been simplified and cultural identification of people then gathered to belong to homogeneous groups, easy to define and manage, thanks to a strong flattening of the tastes, needs and requirements.

This approach has not only made things easier to deal with the consumer, but it started in taking a simplistic approach, usually trivialized when interact only with products far away from cultural or territorial identity, always identical in all places where we go. This is evident in supermarkets or shopping centres now exported globally, where we always find the same types of stores with the same brands and same products, these stores are designed to be

recognizable as belonging to a chain, but outside from the local context and culture in which they are located. In this way it leverages on weaknesses of users, styles and trends dictated by them is induced to buy a product not for its true quality, but rather to the lifestyle that is suggested.



## THE CURRENT CONSUMPTION MODEL

Just as users, individuals who have the privilege of living in developed countries and can afford a comfortable standard of living, are used to consume goods and products that no longer have any relation to the context in which they are located.

Their only link with the user is to perform a function that he choose.

In this sense, the current market is the result of an evolution that has focused on increasing its size, damaging those weaker realities that in some way hold onto the territorial origins. If today we have to buy an appliance almost without a doubt we will turn to the big super-market chains that speaks to us through some distribution giant, owner of specific chains of supermarkets, shopping malls or on-line shop we do not know the origin.

This strong imbalance towards mass production and the resulting distribution has out-sourced almost all actors in a supply chain, and consequently also the distribution.

The global undifferentiated users will have ideologically the same features and the same needs wherever they are and at any time because it belongs to that target audience the industrial giants are designing for.

If for example the most widely identified food conservation method is the refrigerator, this will be the same in all parts of the world, but at the same time it doesn't belong to any of these context: a citizen of the Mediterranean area in the kitchen will have the same machine we can find in the homes of the Scandinavian countries, however, this does not take into account that in the very first case the outside temperature is likely to span the entire year will never go below its internal temperature, while the latter is in a context where, for most of the year, the temperature outside the housing is much lower than the temperature inside the refrigerator, making it ridiculous and insane energy expenditure for the conservation of the temperature, when you could use what mother nature puts available<sup>4</sup>.

Paradoxically, in those places where the temperatures are so low, the man in order to live comfortably use energy to heat his home and then other energy to cool a closet used for storing food in the kitchen.

In this way, however, the large multinationals in the market of household appliances will not have to worry about anything except to continue to produce more pieces to a larger number of consumers and find some winning strategy for selling.

Giants will no longer produce in countries where they have the capital, but the production will be outsourced in the so-called "southern countries" where they can take advantage of a more moderate labor costs, without regard to respect workers' rights or issues such as the disposal and end of life, these countries often serve as industry but also as landfill at a planetary level.

Doing so huge amounts of resources are transported from one part of the world to another

<sup>4</sup>We don't face here the problem of the conservation technology (that can be a deep design issue), we are just comparing two identical process (using energy to decrease the temperature for the medium-short term conservation) in two different countries.

following criteria only suitable from economic point of view, thus creating unbridgeable gap of resources with the sole purpose of producing an increasingly unbridled consumerism. This relocation brings to an extension of the scale of distribution and this have a double cost: one on the economic level that users will pay, and the other in terms of sustainability that will be paid by the environment.

Beyond that comes another very important actor in this kind of model: the one who takes care of logistics. For moving all these goods a lot of money will be managed and he will directly interface with the distribution so to influence the market price and the decision. He can speculate exploiting the large number of passages in which he is involved and will have a good gain over the network built specifically upon these shifts.

All this belongs to a single frame: the sad effort by the whole world to lead with a frantic lifestyle that in the past gave us the well-being but now is putting our future at risk.

To feed this mechanism several strategies are used: to constantly have new products to churn out, the market only changes their form, so the trends and fashions are followed, the user feels satisfied but he most likely has acquired a product that has under the new skin approximately 70-80% of the same components that the model before had<sup>5</sup>.



The *obsolescence* plays a very important role: consumption is driven by fashions and trends imposed by a not-so-honest approach of marketing agents. The consumer has to buy forms to pursue a lifestyle that he is suggested to follow by a truly bombardment of advertising.

<sup>5</sup> cfr. George Dieter, *Engineering design: a materials and processing approach*.

When these forms are no longer representing the desired lifestyle, the object will be obsolete. In the worst case the object in question will stop working properly after a predetermined period, this aspect is part of the even less ethical strategy of *planned obsolescence*<sup>6</sup>. You can't repair it so you will throw it.

A product made by components is currently designed to be easily *assembled*, in this way will save money and time during production; naturally if somebody produces components in the other side of the world, during the assembling nobody try to understand how they works really. A fast assembly doesn't mean a fast disassembling: in fact both maintenance and dismantle are difficult operations, due to irreversible connections or closed components. The manufacturer have achieved its purpose: when the product doesn't work anymore, if it is impossible to repair it will be replaced by a new one.

This results in a drastic increase in the number of end of life objects, that will fill up landfills. It will be difficult to separate materials they are made, and so the disposal will be very difficult<sup>7</sup>.

The tools we use are closely related to the lifestyle we lead, our traditions and culture. They change during the time following not only the trends but also the needs, as we can see in the evolution of form and the importance of the freezer.



If we pay attention, during the last forty years, the freezer appeared upon the refrigerator as a little space dedicated to ice and to those few goods which need very low temperature. During time, the little space become bigger and bigger, until cover the entire space of the

<sup>6</sup> *The Light Bulb Conspiracy* (2010) is a documentary about planned obsolescence that can be seen on.

<sup>7</sup> Despite the disassembly of the industrial level is difficult and expensive, there is an increasing number of artisans who dismantle, recover and repair electrical and mechanical tools. This practice, which in India is called *Juggard*, is so widespread in big cities to give work to entire neighborhoods. (cfr. Thackara 2005).



appliance, making necessary to double the tool used for conservation.

The evolution of size and performance of the appliance can be find in the increasing importance of the *cold chain* in our daily life. In fact the frozen food, easily ready for use after a quick cooking, even in the microwave, is the perfect source for the quick meals that the lack of time forces to have.

So we have at home an increasing amount of frozen food ready for use anytime, the conservation time is long, we forget to take care of them because we know that they will never betray us, they will be ready in five minutes. So the size of the freezer have increased to meet the consumer space problems.

Simply analyzing the formal evolution of a mass consumption tool, we can recognize the uses of consumer and their changes over time.

Adopting the cold chain consume model has of course consequences that go beyond the evolution of the freezer. Infact when we choose to buy a frozen food we accept and finance a system where the distance between food and consumers becomes larger than ever.



In particular we identify four different kind of distance, which are:

- A physical distance. Thus justifying a long chain of logistics that will travel hundreds of miles to bring a food on our table that has nothing to do with the territory in which we live.
- A distance in time. This food will be grown all year without complying with its natural season, its development will be blocked to allow the long transportation, and to guarantee that it will not go bad, it is grown with pesticides and metabolizing to suit the needs of conservation.
- A commercial distance. None of us really knows the provenance of what we eat, its quality will be guaranteed by a brand that often has an appeal that has little to do with the chain that is behind the product. The presence of intermediaries forces us to shop only at

Large Retail Trade, where there is a boundless offer, but unfair prices.

· A cultural distance. The impoverishment of diversity, caused by monocultures crop and intensive cultivation, leads to the loss of local traditions of preparation and cooking of foods, which in the countries are not only diet, but has also a social and cultural role. If we analyze in detail the flow of food, seen as a resource that pass through the home system, we immediately notice that before arriving on our plates, the foods most often face a lengthy chain of events.

Take for example a fruit that we normally find at the supermarket. With a few exceptions, it is very likely that this has been intensively cultivated with the use of pesticides, hormones and antibacterials. His appearance will be pleasant, we can find it throughout the year and come into our home aseptic, sterile treatment due to its production chain. But the place where it was grown is where labor is cheaper for farmers, that means far away from industrialized weasten countries. Knowing that it has to face several miles to travel, it is picked before the harvest is mature, in this way it is bitter and the skin is tougher, but it can be stock in larger chests without crush or bruised. Before getting to the point of sale has been stored in a warehouse retailers, these reserves represent a stock, immediately available according to market demand, it could stay in these places also for long period, so it has to be frozen, always before its maturity. When the time comes to appear on the counter of the supermarket will be defrost and may conclude its maturation cycle traveling again. All these steps are carried out thanks to technology and chemistry currently available, but what are the repercussions on our health?

The choice of food we eat every day significantly determines our health but also influences the shape of our territory, that's why the consumer should finally be active and critical in his choices.

Recent research in the medical field have confirmed that the so-called autoimmunity diseases, as well as allergies, are becoming increasingly affecting younger individuals. These studies have indicated in the food the main cause of these diseases. If we consider our diet we realize that often it consists of foods from industrial processes.

In addition to these problems that concern us, through our actions we facilitated the development of a long food chain, which initially involves the intensive use of land with all its devastating consequences in terms of environmental sustainability and exploitation of underpaid labor in less developed areas.

Thus once again the logistics behind a food product expands excessively, requiring unnecessary infrastructure for large-scale displacements and a great deal of effort, money and energy to go around.

Will be involved in the chain a series of totally unnecessary steps, whose cost is essentially paid by consumers, through higher prices of products, and by the environment, that seeks to absorb the deficits caused by changing its natural balance.

Also problematic is a further aspect the possession of excessive power by the intermediaries

involved in large-scale retail chain, to safeguard their earnings are convenient to ease the problems of long series of steps. The “buyers” of the retail buy the fruits on the market and put them on the market, it is very common, however, that their actions are dictated by the laws of the market and food is viewed simply as a commodity to be sold like any other industrial product.

These goods are no more food with nutritional and organoleptic qualities, but economic value to be achieved at any cost. Then will be triggered mechanisms associated with supply and demand: the more you sell easily and more there will be demand, products will be available anyway, not minding the limits of their rhythms... This urgent demand to increase the production flow, get stressed natural processes and acts on the fields as if you were in front of any manufacturing sector, not in relation with a cycle / process that is subject to seasonality, for alternation of crops to renew and maintain the wealth of humus in the soil.

Because of this centralization of power in the market who loses from economic point of view are the growers, who not only assist the progressive impoverishment of their fields with the consequent requirement for investment in measures from intensive cultivation to keep them productive, but the less lucky and the less powered will have to sell their products to mass retailers just because this follows the rules of the market.

However, what should worry the consumer more than anything is the apparent lowering of the quality of food. The quality is too easily forgotten in the crops, on farms and in industrial production, but food is still communicated through trademarks, statements and rhetoric. In fact the consumer has no choice but to reach this compromise of trust “as reported”. This is because it is not possible in these cases “really touch it with my hand.” We lost all contact with the actual origin of the food and who produced it.

And here we return again to all the effects in the dynamics of a “driven consumption”. The user has to decide influenced by the opinions of the offer and has not even put in a position to judge whether these are reasonable or not. Thus once again we have a real consumer education, and we lose touch with the real value of things.

#### THE TERRITORIAL SYSTEM

Domestic activities associated with food are many and this is the reason why this resource deserves further attention. Our design approach is closely linked to the tools that the subject uses to relate to it. As one of its basic needs of man, the time for purchasing is a delicate stage in our model of consumption. Finally, all activities related to food production have evolved by developing a closer link with the natural systems from which they come, they are the same people who surround us in the end.

In recent decades, the way we consume has however turned these food activities, once related to seasonal and local time, in activities disconnected from space and time, placed in areas just for their logistical or economic factors.



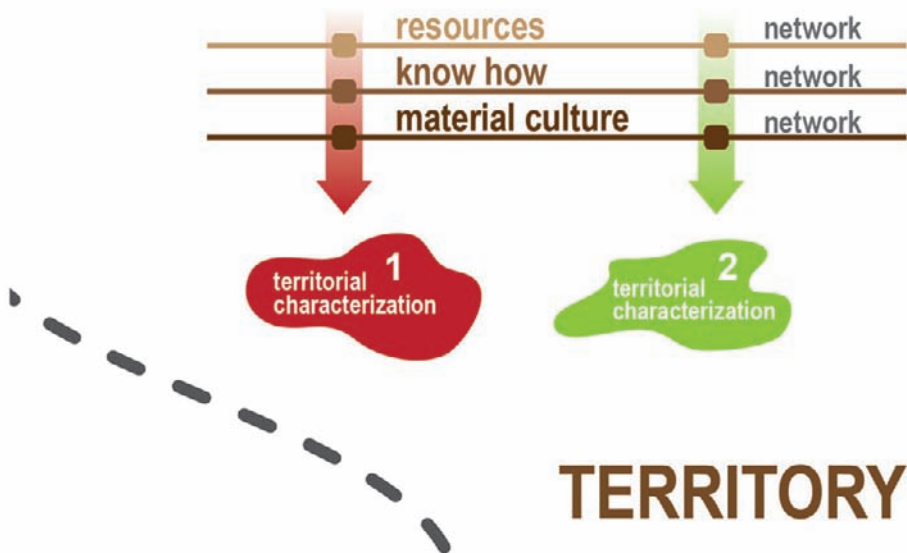
This approach has generated considerable impact on the cultural level (the know-how of an area), ethical (speculation on weaker actors) and not least in importance on the environment (generating a constant dispossession of land, often leading to changes in crop typical and the divestment of the territory).

All these aspects are actually connected with the wrong approach we are leading at the global level.

As we can confirm by the historical point of view, a region is characterized in time and space from the sedimentation behavior that we find on it and its peculiarities.

In a specific area there will be specific *resources* available and not others that can be found on the other side of the world. Historically, these resources have been exploited for its goals, which has developed a well-defined *know how*, connected with the place where he lives.

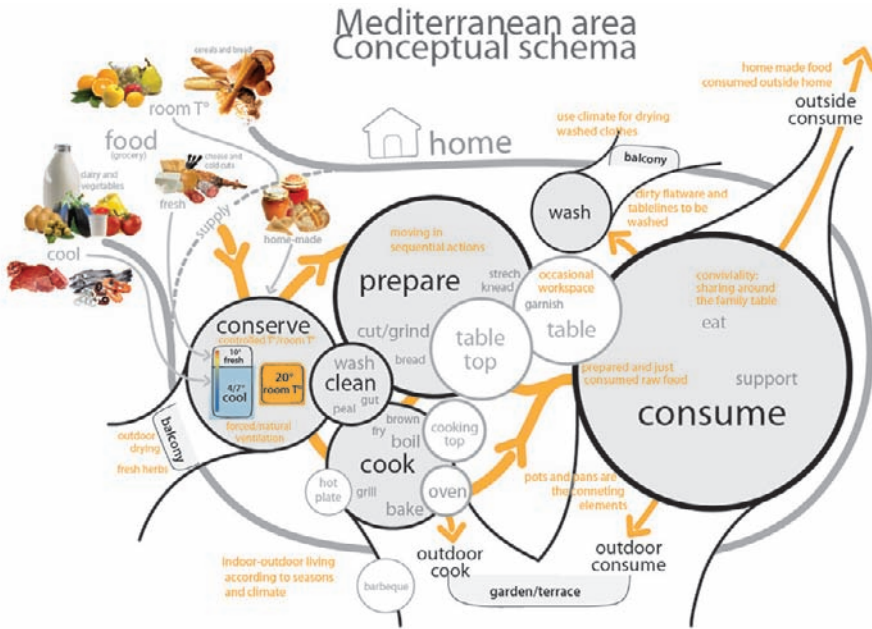
Over the years this is going to be able to stratify and then in that territory has developed a tangible *material culture* with lots of customs and cultural aspects, all unique, that we can't recognize as same in another territory.



#### DESIGN FOR A NEW CONSUMPTION MODEL

So a new consumption pattern can be articulate between any of these parameters: the Home System, the tools, the territory and the subject. What matters is to keep in mind their close relationship, so similar to a real life relationship.

In our design process will be taken into account the dialogue that will develop between the various guidelines.



The first active player in all this is us, subject really aware of their chosen place in the center of this system.

The home system will be considered by a holistic point of view, that will highlight all the dynamics involved in it. We analyze the flow of resources moving into the system, creating a functional model of reality taking into account flows over resources like water and food, energy from the network at various levels. In addition to this we will analyze the processes that occur within this system, every actions carried out for an objective. These processes require the input for their implementation, will reach their goal and produce the output. To do this we establish the precise relationships between the actors that come into play and the contexts belonging to the system.

This type of analysis will be twofold: qualitative, to know exactly what we have, and quantitatively, to know the dimensions of the system.

Doing so we will have a clear picture:

- the resources that we possess or we need, with all their characteristics and their origin.
- waste production within the system or in its neighborhood.
- what happens in detail in those processes taken into account.

According to a systemic approach to this initial step of the critical issues emerge very clearly caused by the behavioral model or the linear model of consumption currently required. With the systemic approach these flows will be reorganize, optimizing resource usage and giving more value to waste. These wastes can be reused by other processes, existing or newly fallen into this reality. Alongside the new processes will arise and new relationships and

consolidate the new system will take shape following the house rules of systemic approach. The actual design of electrical instruments will be only part in this complex landscape.

Each instrument will be deeply analyzed:

- on one hand from a systemic approach (taking into account the processes carried out, resources used, flows involved, relationships formed and waste products)
- on the other hand the functional analysis (a basic schema of the functions will be designed, it describes exactly the steps that the tool addresses to perform the function for which he is appointed. The schema will then be criticized if that is the most strategic in our system, to perform the function in question).

Also in this case will emerge critical aspects and new design concept.

The designer has thus constructed a general map of the points on which to intervene. Then lowering the spatial characterization to which the system will attempt to reconcile his house guidelines contextualizing the project in all respects.

Networks in that area identify its resources, the know-how of who lives and material culture in its history, will influence the decisions of the designer by offering new opportunities and establishing a strong link with the territory.

The great effort made to account for so many and so many dynamic parameters will be repaid by the fact that the only way the designer can truly understand the consequences that will result in environmental, social and cultural.

To return to our refrigerator, we see that the existence of this instrument for the preservation of foods, as well as we can see today, is being challenged in several respects.

From a design process of such features, based on systemic, will arrive to have a new method of preservation that may not have anything to do with the traditional refrigerator.

Will consider first of all what must be preserved, its origin from the surrounding area, what time of year is and how you can keep trying to exploit the resources offered by that place, as the temperature due to climate or alternative energy sources if necessary. In addition, this new tool will develop according to the relation with the user, and will enhance respect the needs and behaviors of people who inhabit the territory, favoring their uses and customs.

If it takes resources in a synergistic way with other instruments in the Home system, adopting a dialogue and dynamics to optimize these resources, fully exploiting what touches as input and avoiding creating useless waste to be disposed of for other processes in the system.

## THE EFFECTS OF THE PROJECT

The impact on the territory by this kind of approach will be several:

- Integration in the context that respects and facilitates binding to the food from the region will promote the natural cycle of the agro-food chains and independent rhythms become stressed to deal with big production to export beyond the borders.

- Respect and reinforcement of the cultural aspects of the production site will be kept in view, because if a tool is directly related with the human subject, then the most suitable labor to produce it will come directly from the know-how that territory and draw on the information most useful to the production by the real material culture.
- Thereby encouraging economies of scale will prevent problems in advance to the expansion of logistics and the laws of the market.
- New production logic will take place, to produce cheaper and better, actually using the resources you have available on site, without stressing the environmental balance, and turning to a consumer audience that will be reduced to that territory.
- Doing so the quality of any product shouldn't need to be communicated, and will prevent all that is influenced at the level of consumption driven. In contrast the quality of a product will be directly guaranteed by membership in the chain of that place, which remains under the eyes of all subjects of the territory, if something is not satisfied with the consumer, he can play a direct control.
- Finally, all these aspects will increase the level of welfare and health in that particular place so as to utilize everything that revolves around the trio *food - health - territory* whose importance today, is becoming crucial.

The most interesting aspect of this new perspective is that we are ready to adopt it: no need for a technological effort or economic issues. It is sufficient that the man realizes that things can not go forward, looking around with an adequate level of information will not be hard to find that we too are part of a complex network, the fragile balance, but not yet completely compromised.

Currently we are sure that preclude these equilibria for profit's sake is not useful at all.

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