

The two faces of sustainability

Daily and ideologically

Roberta Barbán Franceschi

Architect and urbanist
Official master in Industrial Design from the UNESP and official master in Research, Arts and Creation from the Faculty of Fine Arts, Universidad Complutense de Madrid.
Professor, Department of Art and Design, Faculty of Arts and Communication, Universidad Europea, Madrid, Spain.
E-mail: roberta.barban@uem.es

Dra. Magda Kochanowska

Assistant professor at the Theory and History of Design Department at Faculty of Design, Academy of Fine Arts in Warsaw, Poland.

Over the course of the 19TH AND 20TH CENTURIES a spectacular demographic development has been witnessed. In 1800, our planet had a population of around one million inhabitants. At the start of the 20TH CENTURY the population was 1,660,000,000 and by the end of the century it had reached the alarming figure of 6,850,000,000 and is set to pass the seven billion mark during the first decade of this century. This increase is basically due to the following factors: the reduction in the cost of food; the huge progress made in medicine and in the development of industry in general. It is estimated that industrial production increased thirty-fold over the course of the last century.

The demographic data and the traumatic increase in industrial production have given rise to a new dynamic in global development. The website www.worldometers.info offers a real time overview in which all the basic world statistics are shown expressed in numbers, changing at a shattering speed. The pace at which the planet is changing is surprising: the number of births now exceeds deaths; natural resources such as petroleum or coal are diminishing; the money invested in the fight against obesity exceeds that of the fight against hunger. This data objectively demonstrates the imbalance in which we live. One of the main causes has been the lineal industrial production model that is still used in many industrial sectors: the raw material enters the production line, is transformed into a consumer good, is consumed, and on reaching the end of its life, is thrown away and transformed into waste that, in many cases, is impossible to recycle.

Biodegradable We are many, we produce a lot and we consume more than our ancestors, at the same time as the duration of usage of objects is ever-reducing. We see them fulfilling their functions then dying, while products from past civilizations fulfill their functions and outlive the generations.

industrial system **Thierry Kazazian** reminds us that in less than a century, the number of objects in our personal surroundings has increased. A family of four used to own between two and five hundred objects. Today this same family has between two and three thousand objects, with a useful duration greatly inferior to their potential. A drill, for example, is designed to last ten years and its average use in a house is thirty minutes per year.

obsolete Today's society is surrounded by such items, and we could say that we live in an **era of object multiplication**. Imagine our lives without the apparatus that surrounds us -cell phones, computers, washing machine, etc.-. Many people would find it impossible to live without them, whether for reasons of work or lifestyle. These **apparatus are the true prostheses of the human body**.

society *Cradle to Cradle*, one of the most outstanding books on the subject, states that «the majority of products are creating using valuable materials whose extraction and manufacture requires effort and

costs: billions of dollars in material assets. Biodegradable materials of today such as food and paper also have value: they can decompose and return biological nutrients to the Earth. Unfortunately, all these things are found in a tip, in which its value is wasted. These are the last products from an industrial system with a lineal design, a one-directional model: from cradle to grave. [...]. Sometimes, even the product itself barely lasts an instant. It is usually cheaper to buy a new version of the most expensive electrical appliance than try to find someone capable of repairing the old one. In fact, many products are designed to become obsolete from the moment they were conceived, designed with the aim that they only last for a specific time, and thereby allowing and encouraging the customer to throw the article away and buy a new one»².

In the 1950s awareness started to be awakened that such unchecked consumer behavior would give rise to a danger. The first critical voices were raised against consumerism and the progressive degradation of the environment appeared in publications by **Vance Packard** such as *The Waste Makers* (1960)³ that offered the first criticisms on programmed obsolescence and from **Victor Papanek**. In his book *Designing for the Real World* (1971)⁴ the latter presenting a pioneering vision of a



pollution

design
ecology

survival plan in a world that is using up its resources and energy. Papanek set out examples of how responsible design can reduce pollution of the environment, solve the issue of world hunger or other problems that are unacceptable to modern society. Undoubtedly he was the champion of design committed to society and ecology and he has continued to be an inspiration for many designers. Over the last years, a series of books have been published that have dealt with the problem, that, apart from the outstanding book already mentioned, include *Cradle to Cradle*, by William McDonough and Michael Braungart and *In the Bubble* by **John Thackara**. Both of these demonstrate the alarming level through the application of ideas of sustainability today and offer proposals for making necessary changes.

need
limitation

The 1973 oil crisis was the first sign that the planet's natural resources are limited. At that time, scientists, politicians and intellectuals were already aware of the serious nature of the problem. In fact, in 1968 the Club of Rome was created, an international organization that brought together scientists, politicians and business owners that were dedicated to researching the global problems affecting the world, including the dangers related to the environment.

In 1972, a group of scientists from MIT, at the request of the **Club of Rome**, published a report entitled *Limits to Growth* that discussed the threat of an ecological catastrophe on a global scale. This report contains a list of five factors that could give rise to catastrophe: the intensification of industrialization, the demographic increase, world hunger, the limitations to non-renewable natural resources (oil, coal, and metals) and the deterioration of the environment.

Some years later in 1987, in Brundtland, a special report was prepared entitled «*Our common future*», in which the concept of sustainable development was born: «sustainability is the characteristic according to which the needs of the present population can be met without compromising the ability of future generations or peoples from other regions to meet their own needs»⁵. This report emphasized **two fundamental factors**: the idea of **need** (relating to people) and the idea of **limitation** (relating to the planet).

In 1992, in the city of Río de Janeiro, the United Nations conference took place on the environment and development, known as the **Earth Summit**, in which 172 Governments and 2,400 individuals belonging to NGOs



took part. At the same time, a forum of more than 17,000 NGO professionals was set up. The conclusions were put together in five documents: Agenda 21, the UN Framework Convention on Climate Change, the UN Convention on Biodiversity, the Río Declaration on Environment and Development, and the Statement on Forest Principles. The most important aspect of the meeting was the document prepared by the **US National Academy of Sciences and the Royal Society of London** that established a challenge for the future: to halt the degradation process of the environment. As both institutions pointed out, the next thirty years would be key to meeting this objective.

Over the following decades, various world summits were held to discuss the problem of the environment and create a series of parameters that countries should respect and comply with. The big change would come with the term **Triple Bottom Line** (PPP: People, Planet, Profit) used for the first time by **John Elkington**. This term is applied to sustainable businesses. Achievement of the «triple bottom line would be as a result of maximizing the economic profit and environmental profit, the minimization or elimination of its external negative factors, placing emphasis on the responsibility of the organization in the face of interest groups, and not only shareholders»⁶. As from that moment, **the vision changed completely**. Until then, the governing idea was that in order to be sustainable, it was necessary to reduce consumption. The new vision says that production and consumption must



maintain economic development without impacting on the environment.

The Kyoto Protocol, created in 1997, is an international agreement that aims to reduce the emissions of six greenhouse gases that cause global warming: carbon dioxide (CO₂), methane gas (CH₄) and nitrous oxide (N₂O) in addition to three industrial fluorides: hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆), with an approximate percentage of at least five per percent, within a period of four years from 2008 to 2012, taking as a reference emissions in 1990. Under this protocol, each country has to reduce a fixed percentage of gases emitted⁷.

After Kyoto, intense work at different summits was carried out to achieve an agreement. It is true that these meetings are necessary however they do not accelerate the attitude towards change. The environmental problem is rapidly worsening and governmental changes do not accompany it. In fact, at the **Copenhagen Climate**

Triple Bottom Line

sustainability

Summit in December 2009, the United Nations called to meeting 192 countries to agree a limit to greenhouse gas emissions for the period 2012-2020. This period of commitment should replace the 2008-2012 commitment, agreed in Kyoto. As stated by the General Secretary of the UN, Ban Ki-moon in September 2009, the negotiations were slow, almost nil⁸.

This is the brief history of sustainability from the point of view of Governments and scientific communities. But there is another point of view: that of the individual or user.

The aim of industry, Governments and the collective effort is the human being. Little by little we are becoming more aware that nothing can change if we ourselves do not change. The change in behavior is a fundamental element at these times. The idea of considering **production as a continuous and cyclical system**, with every day less impact on the planet, can take place at the most elementary level. The application of concepts such as repairing, recycling and reusing can change the connection between man and nature.

connection

scarcity

reusing

In the words of William McDonough, «in times of scarcity, the recognition of the value of technical materials outweighs its value. During the Great Depression, people were very careful in terms of reusing cups, jars and tin foil and, during the Second World War, they saved elastic bands, foil paper, steel and other materials needed to feed industry. However, in the post-war period, the market was inundated with cheaper, newer, synthetic materials, that resulted in vastly reduced costs in producing bottles or tin containers, plastic or glass using a central location from which to distribute them, rather than building local infrastructures for their collection, transportation, cleaning and processing of such objects for reuse».

The raising of awareness of both individuals and groups as regards the issues relating to the environment and to consumption has enabled a new attitude towards consumerism. **Collaborative consumption** that is founded on **three principles**: the **redistribution market** (is a way of prolonging the life of the

Collaborative consumption

objects, of applying the five «R's»: to reduce, reuse, recycle, repair and redistribute), the **collaborative lifestyle** (crowdworking centers, hours banks, crowdfunding) and the **product service** (public services for renting bicycles and electric cars)⁹.

Although the idea of the need to revolutionize our habits is progressing from a scientific and political point of view, based on theories and research carried out over previous decades, until now, no significant change has been achieved in society as a whole. Current and future generations are and will be responsible for the return to harmony. It is clear that **this metamorphosis should be carried out in a complex way, on different levels**: from institutional laws capable of changing behavior from large industry down to the habits of individuals in their day to day lives.

1 Thierry Kazazian, *Design and sustainable development. There will be an age for lighter things*, Senac, Sao Paulo, 2005.

2 William McDonough and Michael Braungart, *Cradle to Cradle: Remaking the way in which we make things*, McGraw Hill, Madrid, 2005.

3 Vance Packard, *The Waste Makers. (The artifice of wastefulness)* D. Mc Kay Co., New York. 1965.

4 Victor Papanek, *Designing for the real world*, Blume, Barcelona, 1997.

5 <http://es.wikipedia.org/wiki/Desarrollo_sostenible> [Checked: 03-25-2012]

6 <http://es.wikipedia.org/wiki/Triple_resultado> [Checked: 03-25-2012]

7 <http://es.wikipedia.org/wiki/Protocolo_de_Kioto_sobre_el_cambio_clim%C3%A1tico> [Checked: 03-25-2012]

8 <http://es.wikipedia.org/wiki/COP_15> [Checked: 03-25-2012]

9 Clemente Álvarez, *Collaborative consumption: how much do we possess?*, El País January 9, 2012. <<http://blogs.elpais.com/eco-lab/2012/01/consumo-colaborativo-cuantas-cosas-poseemos.html>> [Checked: 03-20-2012]