

A new design language: Meeting sustainability expectations

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Every design project that promises changes must, after all, establish an efficient communication with their public. And all sustainable projects should make clear their commitment to society's transformation. More than modelling forms and functions, designers create ideas and proposals, which their customers or end-users perceive or not. Therefore, this new symbolic value given by design, in this paper named sustainable value, should be seen as an opportunity to communicate an idea, a proposal of cultural and social change, which needs to be perceived in terms of consumption. Current researches suggest very interesting solutions to new business models, and the moment could not be more suitable for design professionals, who deal with the possibility of creating new options and opportunities. After all, to design solutions that guide society toward a sustainable future is definitely an appropriate activity. To verify how products of sustainable design communicate with their public, this paper presents results from a survey carried out among a group of thirty consumers of furniture and decorative objects, from three decoration stores in Rio de Janeiro, Brazil.

1 Introduction

Sustainable design is a recent research field in deep changes and evolution. The amount of terms and concepts related to this area increases with each new research or scientific publication held in the world.

Every new field, which deals with an up-to-date issue like sustainability, is open to a number of questions and debates that will ultimately expand the limits of its scope. Design is closely linked to products and services conception. Therefore, the pressures suffered by the industry to adjust their activities, in reducing waste, or making a rational use of natural resources and energy, or collaborating with the society, ultimately influence new ways of design thinking.

However, after some research experiences in socially-oriented and environmentally efficient projects, design was faced with a new challenge: only a radical change in the socio-economic system may lead the society to a sustainable future. Any proposed change seems to be, at first, an unachievable suggestion. But it is also true that any change should start with a group of professionals who deals with the possibility of creating new options and opportunities. Certainly, the designers can apply for this role.

But, for this movement to succeed, the participation, perception and recognition of the designer's work are essential. In addition, the consumer or end-user is also protagonist in this potential success story.

Every design project that promises changes must, after all, establish an efficient communication with their public. And all sustainable projects should make clear their commitment to society's transformation. More than modelling forms and functions, designers create ideas and proposals, which their customers or end-users perceive or not. Therefore, this new symbolic value specified by design, in this paper named sustainable value, should be seen as an opportunity to communicate an idea, a proposal of cultural and social change, which needs to be perceived.

This paper examines how sustainable products communicate their proposal to the society. The interior design domain, especially the production of sustainable furniture and decorative objects, established the ground of this analysis. The conducted research was defined in order to assess the relationship between furniture and decorative objects and their customers and if, in some way, they establish new consumption patterns.

Another concept that guided this paper was the symbolic approach of a sustainable product or service – the creation of a language that could be recognized and understood by consumers or end users. After all, to define the meaning of the sustainable value is very important to its early establishment. And their perception and recognition are fundamental from the consumption perspective.

Thus, this paper investigates the way sustainable value is assessed by furniture and decorative objects consumers, showing results from a survey carried out among customers from three interior design stores in Rio de Janeiro, Brazil. The research includes a conjoint analysis – a statistical technique used in market research to determine how people evaluate different features of an individual product or service – and a qualitative interview, which determinates people expectation and impressions on the relationship between design and sustainability.

2 New consumption patterns: sustainable value, design and lifestyle

Global changes and economic crisis are forcing the market to adopt proposals which involve new concepts that emerge in the world. To achieve a model of sustainable consumption and production is necessary to transform the industrial system (and how to design products and services), but also develop new sustainable business models, a challenge that, traditionally, belongs to marketing professionals.

Marketing is usually defined as a lasting and profitable relationship established with customers (Kotler and Armstrong 2004). But the modern marketing is more comprehensive, also considers the consumers' needs and desires, developing solutions that bring greater value and best price, and allowing for the best options for products distribution and promotion to their clients.

Concepts such as green marketing, eco-marketing and environmental marketing (Charter, & Polonsky 1999; Ottman 1998; Peattie 1992; Coddington 1993) were created during the 1990s, and were, for the most part, focused only on environmental issues. Sustainable marketing, beyond this scope, also considers the social dimension (Belz 2006).

Sustainable marketing establishes and maintains relationships with consumers, but also takes into account the social and environmental issue. By creating and embedding social and environmental value in products and services, marketing attempts to increase the sustainable value back to the consumer.

Another important concept is sustainable consumption. The individual perception and evaluation of benefits and costs of a sustainable product or service based on personal and incidental factors such as credibility, level of information on the subject, resources available and the situation in which the purchase occurs. According to Belz (2006), based on these observations, we can distinguish three groups of people: those who are concerned about social and environmental impacts, those that can be driven, and passive people.

1. The first group has a high level of consciousness, accept higher costs, and they are loyal to products and services embedded with social and environmental value. Often, this group is small and represents people involved with innovative proposals.
2. The second group is aware about social and environmental values and recognize them, but is not necessarily committed to the purchase of such product or service.
3. The third group is not necessarily aware of the social and environmental issue and that kind of value is not understood and weight at the time of purchase. This group represents the average consumer.

Sustainable innovation is, nowadays, a *sine qua non* condition for marketing success and development. Examples of such innovation in sustainable products and services are, for example, car sharing service and fair trade products. But it is important to evaluate how people accept this kind of innovation and in which way these products and services can be positioned in the market.

According to Belz (2006), there are three ways to place them:

1. The social and environmental dimension has an important weight to be reported as a primary benefit of the product or service. Performance and price have a secondary position.
2. The social and environmental dimension has an important role, but not predominant, it also deals with performance and price.
3. The social and environmental dimension is an integral part of quality and performance.

The first position in the market is suitable for pioneering companies that operate using a niche strategy, aiming at the active group. Rarely, is suitable for midsize to large companies, as the niche for these products and services is restricted.

The second position is directed to consumers who may be driven, in terms of social and environmental awareness. If companies align such quality to traditional criteria that defines shopping as taste, good design and durability, this group is opened for such innovations. In several markets, they represent a growing group.

For those aiming for the mass market, the third position is the most appropriate. In this case, the social and environmental quality is embedded in products and services, but is not necessarily a value for their clients.

Many markets are polarized with two types of segment: one that demands low-price products and services with good quality and other that demands high-quality products with relevant aggregate value. A good business opportunity for innovative companies would be the second segment.

For non-governmental organizations (NGOs), it is important to increase the possibility of creating products and services of a social and environmental standard level. There are also companies that adopt this position, as their clients are sensitive to price, and the social and environmental value is as an additional "free" benefit. It is an alternative for those who want to

assure a good brand image and company reputation, but there is also a goal of using this feature as a market differentiator.

Another very interesting possibility is defined as a sustainable marketing approach based on the pyramid base, as suggested by Prahalad (2005): the poverty approach as an attractive opportunity for growth, generating income and meeting basic human needs of certain populations. In this case, the social dimension is more important than the environmental one.

According to Prahalad, the companies interested in using this strategy choose a place, train a multidisciplinary team which work in this region and establish partnerships with local organizations. The employees live there, interacting with local people, assisting them in daily activities, creating a basis of trust. This is fundamental to recognize the community's needs.

Some residents are also invited to identify along with the company the kind of business that can benefit both the company and the community. The keyword in this process is co-creation. The company offers know-how and capital, and the community offers local knowledge and values.

At the same time that the community gets the professional resource needed – not only to keep the business prototype independently, but also to extend it – the company can use the knowledge gained from this experience to create similar models in other locations, adapted, of course, to the specific characteristics of each case.

It is in this context, in respect to environmental and social questions, that sustainable design appears as a new proposal for contemporary design. Design has to be responsible in relation to ecology and society. And it has to be revolutionary and radical. It must maintain a minimum inventory guided to the maximum diversity (Papanek 1974).

Therefore, considering the sustainable concept, what is the collective code that categorizes sustainable products and services, allowing sustainable value consumption? What is the symbolic meaning of embedding sustainable value into a product or service?

To embed sustainable value into a design product is to show its origin clearly, to tell its history, to inform on its use, to satisfy a real necessity and to collaborate with local economic and social development, allowing consumers and end-users (who really choose and legitimise a product or service) to identify and share this new cultural proposal (Castro 2007a; Castro 2007b).

As we know, it is part of the design job to create symbolic goods to evocate desires, fancies and dreams. And sustainable products and services are symbols of a new lifestyle to be fully achieved.

3 The research

This study was conducted among a group of thirty furniture and decorative objects consumers, from three well-known stores in the city of Rio de Janeiro.

The Elementos daTerra store, located in Copacabana district, offers a selection of crafts produced by designers at NGOs (non-governmental organizations) and cooperative associations, from different regions of Brazil. The store has products manufactured with natural fibres, wood from demolition and other natural raw materials.

Fernando Jaeger's showroom, in Jardim Botânico district, offers, specially, wood furniture and accessories for decoration. Fernando Jaeger is a designer who uses certified and alternative wood in his projects. He is one of the furniture designer pioneers in the development of products with low environmental impact in Brazil.

Daqui Design is a small store in Leblon district, dedicated exclusively to the contemporary national design. It brings together many of the Brazilian newest design names.

The selection of the interviewed customers was defined by non-probabilistic sampling, to achieve information in a quick and low-cost way, due to time and budget limitations. The used criterion was to interview clients who attended the stores as eventual or potential customers, or assiduous clients indicated by the shops owners.

As part of research, two surveys were prepared, a qualitative, made up of a separate in-depth interview, and other quantitative, using the conjoint analysis technique.

The in-depth interview allows the collection of data and opinions, interests, perceptions and attitudes faced with the central subject of the research: the perception of sustainable value in interior decoration products. A pre-determined script in an interview form was established without exposing initially the central issue that was being investigated, avoiding induced responses by the persons interviewed.

In addition, in the interview script, visual stimuli was included with products offered by the stores, for an assessment of aesthetic perception of the sustainable value in design products.

The quantitative research used the conjoint analysis technique. According to Malhotra and Birks, if you choose this technique, you should identify the relevant attributes, determine their levels, define the attributes combination to be used, choose the presentation form of stimuli and select the approach of the analysis. The attributes must be relevant to influence consumer's preference and choice (Malhotra & Birks 1995:554-557).

These attributes are characteristics that describe a product or a service, i.e., what a consumer evaluate at consumption act. In the conjoint analysis, the respondent is asked to make a choice: to select attributes that overlap each other, in a situation very close to the purchase scenario, when the consumer is forced to consider all these characteristics at the same time.

To reach the definition of which attributes were relevant to the research, it was used, as a secondary source, the Planeta Casa Prize, which is held annually by Casa Claudia magazine, a Editora Abril's publication (Azevedo 2007).

The Planeta Casa Prize is an event that recognizes sustainable initiatives in design, architecture and decoration fields, rewarding the winners in the following categories: Product, Construction Material, Social Action, Architectural Design, Interior Design, Student and Real Estate Venture.

The survey attributes were defined and gathered on cards, from an analysis of the furniture and decorative objects winners in the category Product, in five editions of the Planeta Casa Prize.

The four attributes, and their respective levels, were defined as follows:

1. Material:

Recycled, renewable or recyclable: A material that was reused from another product, was made with renewable resources or can be reused in new products.

New or non-reusable: Materials which are virgin or cannot be reused in new products.

2. Aesthetic:

Rustic style: It uses natural fibres, rough wood, it has a straight relation with nature.

Contemporary style: It follows present trends, it is modern and urban.

3. Way of Production:

Craft: One that was created manually by craftsmen from various regions of Brazil.

Craft with signed design: One that was created manually by craftsmen from various regions of Brazil, with the guidance from a designer.

Industrial: One that was produced industrially.

Industrial with signed design: One that was produced industrially with the signature of a designer.

4. Price:

Low (\$): In offering, in promotion.

Middle (\$\$): Average market price.

High (\$\$\$): Above the average market.

Very high (\$\$\$\$): Much above the average market.

Since that there were four attributes (two of them with two levels, and the other two, with four levels), the total number of combinations would be 64 (2x2x4x4). This number would make the task very costly.

According to Curry, the minimum cards number with attributes combination is given by: minimum cards number = attributes levels total number - attributes total number + 1 (Curry 1997).

Using the previous formula, the minimum cards number would be nine. But, considering that the recommendation is to use about 1.5 to 2 times the minimum cards number, it was decided to use 16 cards (Figure 1).

Figure 1: Examples of cards.

Furniture or Decorative Object	Furniture or Decorative Object	Furniture or Decorative Object
Recycled, renewable or recyclable	New or non- reusable	Recycled, renewable or recyclable
Rustic style	Contemporary style	Rustic style
Craft	Craft with signed design	Industrial
Price: \$\$\$	Price: \$\$\$	Price: \$\$\$

4 Results

It was verified that 87% of the interviewees were women and 13% were men, once decoration consumers are predominantly female.

Most of the consumers researched had age between 26 and 54 years and family incomes exceeding 3,000 reais (the minimum salary was, at that time, 415 reais in Brazil), and more than 77% presented a complete graduate or post-graduate level of education.

The qualitative research analysis also found that, for those consumers, ecological products are those that:

"... are made with recycled material, are reusable, have non-industrialized appearance, are crafts, simple and cheap." (interviewee 1 - Elementos da Terra)

"...are made with material extracted directly from nature, such as fibres, straws, leaves, more rustic woods." (interviewee 7 - Elementos da Terra)

"... come from rehandled forests, with supervisory control, from planted forests. They have fabrics that do not depreciate the nature." (interviewee 10 - Fernando Jaeger)

"... are made with recycled or recyclable materials, from reforestation woods, they contain non-aggressive materials to the environment." (interviewee 12 - Fernando Jaeger)

"... come from the nature, don't destroy the planet." (interviewee 20 - Daqui)

"... come from the nature without its degradation, such as authorized wood and paper." (interviewee 21 - Daqui)

As regards to products that carry a social value (they are socially responsible), it was found that they are those:

"... that pay craftsmen in a decent way, come from fair trade, are recyclable, you can know the origin of its material." (interviewee 1 - Elementos da Terra)

"... who value, above all, the work of a craftsman." (interviewee 8 - Elementos da Terra)

"... produced in an environment of fair work, with the labour laws of the country being met, with good working conditions, without exploitation of workforce." (interviewee 10 - Fernando Jaeger)

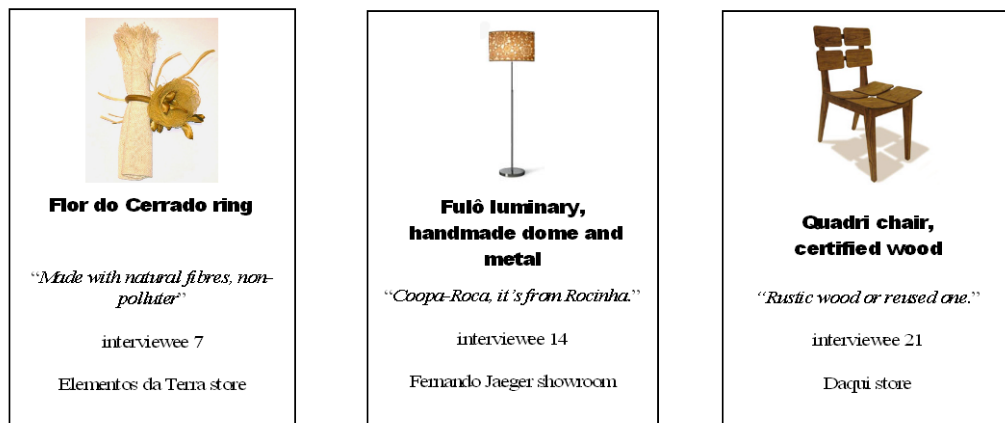
"... made from recycled materials, usually considered 'trash', by cooperatives that help to create jobs for the people of low income." (interviewee 16 - Fernando Jaeger)

"... produced by companies who are concerned about the type of workforce employed, about the qualification of the staff members." (interviewee 21 - Daqui)

"... that do not attack the nature, as indigenous products." (interviewee 28 - Daqui)

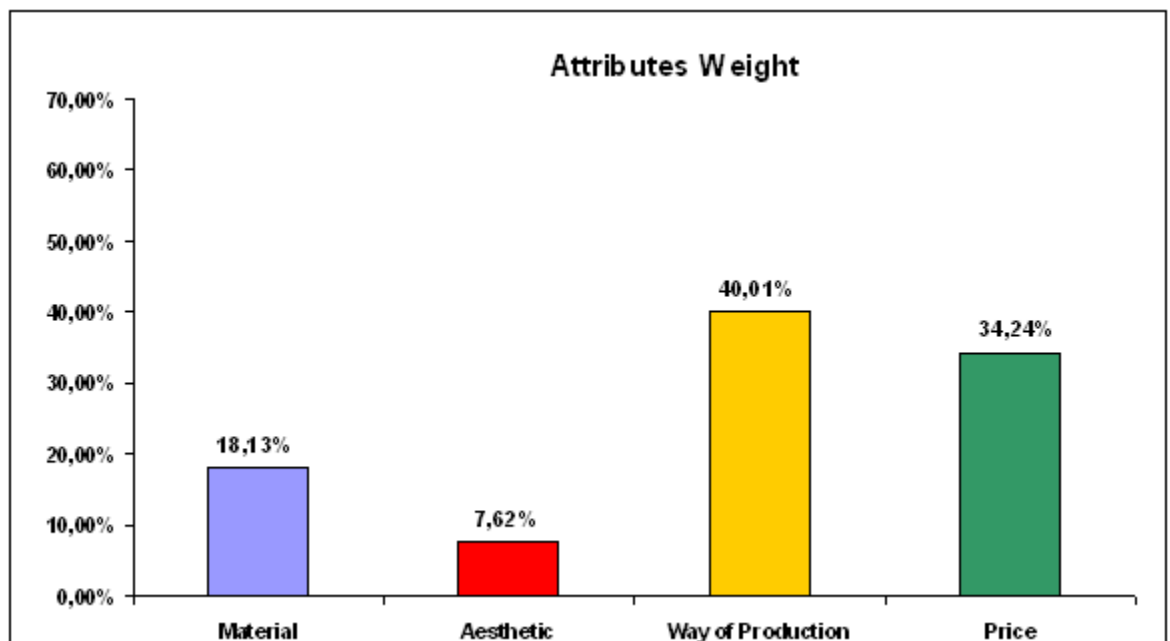
These assertions were further supplemented by the visual perception of products with social and environmental value, selected by customers from the three stores (Figure 2).

Figure 2: Example of products with social and environmental value, selected by customers from the three stores.



Using an Excel application, the conjoint analysis showed that among the four attributes evaluated (material, aesthetic, way of production and price), the decoration shopper was more sensitive to the way of production (Figure 3). The conjoint analysis also generated comparative charts for the levels of each one of the attributes.

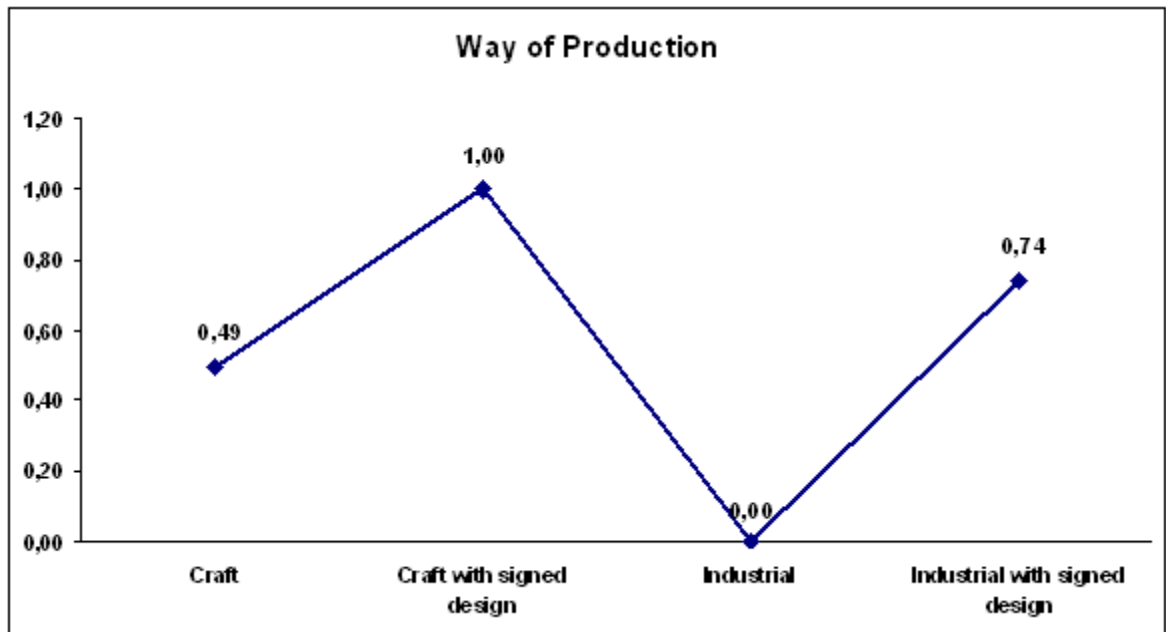
Figure 3: The conjoint analysis: Relative weight among the four attributes evaluated.



When analysing the levels of the "way of production" attribute, that one with greater weight, it was realized that the "craft with signed design" level is the most quoted, followed by "industrial

with signed design" one (Figure 4), which confirms the appreciation of the designer's work. But this observation also points to another direction: the sum of the results of "craft" and "craft with signed design" levels shows that the crafts production is very relevant at purchase.

Figure 4: Relative weight chart of "way of production" levels, on a 0 to scale.



The "price" was the second attribute with greater weight, since a low or medium cost has superior importance faced with the quality or origin of the material used. The recycled, renewable or recycled materials were preferred to new or non-reused ones. As regards to "aesthetic", the attribute with lesser weight, the "contemporary" style was positioned before the "rustic" one.

As a final note of the analysis of this research, it was found, therefore, from the comparison between data generated by quantitative and qualitative methods, that there are marked differences between the understanding of social and environmental value meaning (or sustainable value) and how it is perceived and succeed, or not, at the purchase.

According to the analysis of the interviews, there is an understanding of the straight relationship between crafts and cooperatives work and socially responsible products. Another important fact observed was that the concept of an ecological product is that one made of raw material, which presents an "aesthetics of nature" (Castro 2008a; Castro & Oliveira 2008). However, in the conjoint analysis, such factors did not appear as an important element in the consumption decision, in such a way that they were not identified as sustainable attributes that were relevant for the purchase options.

Namely, the consumers surveyed are able to conceptualize a sustainable product, when requested by the interview, but in the conjoint analysis, when they are subjected to product options in a purchase scenario, they do not perceive and do not take possible sustainable attributes into account (Castro 2008b).

5 Conclusion: A new design language

After drawing a good picture around this emerging and urgent issue of sustainable development, we saw how this new direction led us to a series of opportunities. After all, nothing more mistaken to face it as an obstacle, a limiting factor to the emergence of innovative ideas.

Current researches suggest very interesting solutions to this new market. And for design, this field of knowledge that deals so close to creation, the opportunity could not be better. After all, to project design solutions that drive society toward a sustainable future, improving the wellbeing, is definitely a stimulating activity. Clearly, therefore, we need a deep cultural shift. We are still in a transitional phase.

Design has a fundamental role as a transforming agent and facilitator of changes. Browsing its history and the way it influenced and was influenced over decades, we can perceive its relevance as an object of research. But it is also clear that this important step to sustainability can not be a successful initiative if the people, for which the work of designers is intended, do not follow this movement as an ally. Therefore, the consumer or end-user of a product or service has a crucial participation in this period of transition, towards a sustainable society.

A product or a service is full of embedded meanings which distinguish and unite people, who refer to certain periods, which tell the story of a group. Therefore, this new symbolic value in construction, here named the sustainable value, has to be seen as an opportunity to communicate an idea, a proposal for a social and cultural change that needs to be understood and "bought".

Brazil is a very interesting country from sustainability point of view. In this country, there is room for high-density urban clusters and large natural areas. Brazil also is a land where the modernisation evolves, but the tradition is charming and continues to survive, where economic growth needs to be leveraged, and nature has to be preserved.

The Brazilian sustainable design is a consequence of our social and economic context, where crafts emerged as a strong element of connection, such as a safe harbour in the contemporary frenzy. They allow the recovery of human relations and the regeneration of the social fabric, expanding opportunities for income generation, professional development and quality of life improvement. And natural and traditional elements move genuinely Brazilian new ideas and techniques (Lages, Braga, & Morelli 2004; Ribeiro 1983).

Therefore it is not surprising that crafts and their fibers, crochet, laces, and wood carved by experienced hands are high in the Brazilian decoration market. However, it is not its approach as a facilitator of society transformation, its sustainable value, which is perceived and makes the customer a citizen engaged in this movement, as this paper has shown.

As defined Belz (2006), we can distinguish three groups of people: those who are concerned about social and environmental issues, those who can be driven, and passive people. Perhaps, part of Brazilian buyers is positioned between the studied group of people who can be driven, but most of them remain passive. But this finding should not be seen as a disappointing one and, yes, once again, as an opportunity.

The recognition of the craftsmen work, the perspective of a better income distribution, the recovery of regional techniques and cultures, the development of urban and rural areas, all of these contributions are part of the greater sense of the sustainability concept (Sachs 1993). The small and local may, after all, survive in a globalised world, and a sustainable design product should carry this possibility (Manzini 2007; Manzini 2008).

Finally, there is the "aesthetics of nature ". As in sustainable architecture, which shows in its "skin", for example, green roofs, it is understandable that something is expected of a sustainable decoration product: "the rescue of nature." As the qualitative research shown, for some customers, green products are those made of natural material (at Elementos da Terra store), and for others, those created with natural materials, but from an appropriate origin (at Fernando Jaeger's showroom).

Here, the most interesting would be to perceive the opportunity for the development of projects which create this language of connection with nature but not necessarily with raw materials. After all, the material, this source of so concrete information, leads to a subjective analysis and evokes feelings, experiences, and also has its symbolic value, which is communicated to the consumer or final user.

Furthermore, it could be an exciting experience to reinforce the idea that to bring nature close does not necessarily means to show a "just left the forest" appearance, opening a number of possibilities for a contemporary style, even urban, that address this issue, but not in a didactic and very literal way.

Green products have undergone a long phase of acceptance and in the beginning they were all expensive, low performance and ugly. Then they began to resemble the more "normal" products, while maintaining the "eco" element. Today these products have already exceeded these limits and have become iconic, even without the "sustainability look" (Trendwatching, 2008).

Rather than to develop a sustainable version of an existing product or service, the ideal solution would be to create something completely new and innovative, different from the options already in the market, to shape a new language of products and services that could be recognized as such. Here, the main contribution of this paper lies: to propose a challenge and an opportunity for sustainable design: to unite the concepts of "nature's rescue", "locality" and "social innovation" in a new language of desirable products or services that promise changes.

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