

Connecting through Time: Old Objects, New Contexts, and Design-Centered Research for Sustainability

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1. Introduction

The first part of this paper critiques the tendencies in design and politics to almost exclusively think about sustainability in terms of efficiency. In turn, it proposes an approach that includes the notion of sufficiency, in order to significantly contribute to a more socially and environmentally viable future. As a result of increasing the integration of the sufficiency principle or mindset in the development of design solutions, the physical and conceptual nature of objects as we know them is called into question. This issue is discussed and the challenges it raises as well as its implications for social and aesthetic-conventions are examined. New visual and social 'norms' are seen as necessary to support paths towards substantive, meaningful change. The paper supports the idea that design has a significant contribution to make because it is a discipline skilled in envisioning and 'materializing' alternatives.

The second part of the paper addresses, in a design-centered manner, the issue of product disposability and design for sustainability. By re-perceiving unvalued objects via new contexts, and by reconciling old and new, diversity and homogeneity, the paper and its illustrative design examples provide an original reflection and contribution to the development of meaningful, enduring artifacts and design for sustainability.

The theoretical and practical research presented here looks at how design contributions can be applied to existing objects that have reached a stage where they are value-less and hence readily discarded. The research examines the concept of sustainable material- and visual-cultures and investigates, through design explorations, new ways of (re)designing objects and allowing them to evolve over time. 'Research through designing', a relatively recent approach to academic research that is being explored and is becoming well established at the authors' university, is briefly discussed. Tangible, experimental artifacts—and families of artifacts—that illustrate and explore the issues of sustainability, premature end-of-life, and elevation of objects, through building new connections between artifacts and contexts, are presented. The paper discusses these design strategies, and their conceptual meaning, which allow a transition from technologically and/or aesthetically obsolete products to useful objects that are of aesthetic interest and in line with the economic, social and environmental principles and priorities of sustainability. In this sense these explorations are attempts to connect beauty and bounty.

This work builds on previous research and conceptual designs by one of the two authors that were recently described in *Sustainable by Design: Explorations in Theory and Practice* (Earthscan, 2006). The approach also relates to the work of designers such as the Droog group (Ramakers, 2004) in the Netherlands and the Boym's (Boym, 2002) in the United States, designers who challenge current way of thinking about objects and their conceptual and material nature over time, as well as the work of Thackera (2005), who discusses the need for designers to explore mechanisms for significant, distributed change.

2. How Sustainability Challenges the Physical and the Conceptual Nature of Objects

Sustainability significantly challenges social and aesthetics norms. Indeed, the development of more viable ways of living implies changes in the way we look at objects and, more globally, on the way we interact with the material world. It also involves changes in the way we construct the built environment and, therefore, in the way things look. We can observe that, the more a design solution presents environmental potential, the more the solution in question is likely to look different from what we know (Marchand, Walker, De Coninck, 2006). Therefore, as discussed below, if we are to move closer towards

sustainability, we will increasingly experience a qualitatively different built environment. Consequently, this demands a certain adaptation on the part of the viewer and its visual landmarks.

So far, in terms of strategies and efforts invested to address sustainability in the design and manufacture of products, primary emphasis has been placed on making existing products more resource efficient. This product-centered approach focuses on reducing the environmental impacts associated with goods through, for example, using less material and/or energy during the product life cycle phases, that is from the extraction of resources to the end of life stages. The question asked when using such strategy is: *“how can we improve the environmental performance of an existing product?”* Here, it is assumed that the product in question is adequate; this strategy does not question the nature of the initial object, its role, and purpose. Products resulting from an improvement in term of efficiency usually closely resemble to the initial products. Consequently, such this approach does not particularly challenge conceptual or aesthetic norms or ‘conventions’.

However, sustainability calls for changes that are more fundamental than making products or products-services-systems more resources efficient. Technical and traditional product-centred approaches, alone, are not capable of fully addressing sustainability. As a matter of fact, “[e]vidences suggest that environmental gains from technical improvements in product efficiency have historically been outweighed by an overall increase in consumption” (Carley, Spapens, 1998; Cooper, 2000). Therefore, design needs to move towards solutions that more fully consider both the notions of *efficiency* and *sufficiency*. As described by Reisch and Scherhorn (1999), “[w]hile *efficiency* largely depends on technical innovations as well as on an ecodesign and use of products, *sufficiency* relies on individual behavioural changes as well as on social innovation.” The latter notably asks the following questions: *“how can we produce the same outcome in different and more sustainable ways?”*; *“how can our needs be fulfilled?”*; and *“how can we improve our lifestyles with less consumption?”*

3. Touching Sensitive Social and Cultural Practices

As mentioned earlier, the more we tend towards solutions that encompass the principle of sufficiency, the more the conceptual nature and physical nature of objects will differ from what we know. Furthermore, as illustrated through the two following examples, such solutions involve the modification of sensitive social and cultural practices and structures. As the potential environmental benefits of a design solution increases, the difficulty of implementation increases as well (Fletcher *et al.*, 2001).

For instance, in looking at reducing the environmental impacts related to cars use, from an ecoefficiency perspective, the main focus will be on making the actual car more resource efficient. In moving from an ecoefficiency perspective to one that includes sufficiency, one might also consider solutions such as car-sharing-systems, improving bike paths and public transport and, where feasible, reducing commuting by developing more flexible employment regimes that include some days working from home. Furthermore, one may question the planning and organization of our cities and the conventions that lead to urban sprawl, and consider higher densities and walkable communities. Such thinking can also lead to more vibrant, interesting, and safer public spaces that encourage a sense of belonging, neighborliness, and community.

To give another example, in looking to decrease the energy consumption related to the use of air-conditioning (AC) systems in large offices building, if an efficiency approach is adopted, the air-conditioning device might be redesigned in a way that uses less energy. If one explores avenues that integrate sufficiency principles, a green roof, which insulates buildings from excessive heat and cold, may be considered. This would mean that fewer AC devices would be required. A more complete, but unconventional solution, would challenge at the very basis, highly sensitive aesthetics and sociocultural conventions surrounding the wearing of formal business apparel in the typical business setting. Indeed, together with more efficient air-conditioning systems and the use of green roofs, the establishment of dress codes that are better suited to the climate and the season would actually be ecologically appropriate. Vernacular solutions can also inform our thinking. For example, traditional houses on the Batina coast north of Muscat, Oman, in the Middle East, (a country that experiences an extremely hot

climate), are constructed from materials that provide shade and allow natural air flow through the houses (Hawley, 1980) – effectively, a simple and passive form of air conditioning.

Bearing these examples in mind, design has an important contribution to make in imagining and realizing new possibilities. Design can not only focus on making products more sustainable, but also take a broader perspective and imagine new ways of living and new cultural and social norms and models. Before discussing these wider possibilities, the notion of sufficiency is discussed in more detail.

4. Moving towards Sufficiency

Sufficiency is critical to sustainability. As described by Princen (2005), who criticise efficiency as the society's dominant principle, "[s]ufficiency as a principle aimed at ecological overshoot compels decision makers to ask when too much resource use or too little regeneration jeopardizes important values such as ecological integrity and social cohesion; when material gains now preclude material gains in the future; when consumer gratification or investor reward threatens economic security; when benefits internalized depend on costs externalized." This illustrates well the extent and complexity of the multiple contemporary challenges we are facing in today's society.

While being an essential aspect and strategy for sustainability, efficiency alone does not represent a viable solution as its implementation does not question our current structures. Rather, it encourages the belief that we can maintain our current ways of doing and thinking:

"Ecoefficiency is an outwardly admirable, even noble, concept, but it is not a strategy for success over the long term, because it does not reach deep enough. It works within the same system that caused the problem in the first place, merely slowing it down with moral prescriptions and punitive measures. It presents little more than an illusion of change. Relying on ecoefficiency to save the environment will in fact achieve the opposite; it will let industry finish off everything, quietly, persistently, and completely." (McDonough, Braungart, 2002).

These authors point out that ecoefficiency essentially works to make the old and destructive system a bit less so. They further argue that, in some cases, it can be pernicious as its effects are more subtle and long-term. In other words, it works in an incremental manner. In this regard, they suggest that "[a]n ecosystem might actually have more of a chance to become healthy and whole again after a quick collapse that leaves some niches intact with a slow, deliberate, and efficient destruction of the whole." In terms of limits, Porritt (2005) discusses the *rebound effect* that can accompany such strategies. He notes that more efficient resource use usually reduces costs in a way that makes it naturally attractive to companies and that the response of consumers may be rather different in that any personal savings they make may even stimulate increased consumption.

5. Design-Based Research and the Role of the Artifact

Sustainability challenges many conventions and calls for new and alternative models to become accepted, validated, and desirable codes or practices. This represents a particular area where design has an important role as the ability to imagine and realize the unknown is the strength and potential power of the designer's contribution. Indeed, design has this capacity to envision and materialized new avenues or possibilities.

Design-centered or artifact-based research seems to be an exceptionally fertile ground to explore theoretical ideas about alternatives ways of doing and thinking that are more in line with the principles of sustainability (Seago, Dunne, 1999; Biggs 2000; Barfield, Quinn, 2004; Russel, 2004; Saikaly, 2004). While referring to artifact-based design research, Tonkinwise, Lorber-Kasunic (2006) write:

The politics of sustainability not only points to the importance of this form of knowing, but also makes clear the importance of generating new knowledge in this area. For in most cases, sustainable behaviors require changing our otherwise ingrained conventions about what constitutes comfort, cleanliness and convenience (Shove, 2003). In other words, successful sustainable designs need to manifest new

knowledge about ways other than those dominant in the market today in which humans can interact with things.

By engaging in creative design activities and through the development of conceptual product design examples, the designer-researcher can address these issues and generate new insights and knowledge. The creation of exploratory artefacts contributes to the research by focussing, manifesting, and illustrating concepts and strategies. It serves as a catalyst for advancing theoretical ideas during the design phase – where the researcher, engaged in the activity of ‘doing’, uses the act of designing as a tool of reflection – and for the presentation of these artefacts for consideration and feedback – where the artefacts allow for visualising, communicating and debating ideas, and for gaining input on the concept being illustrated. It stimulates reflection by the action and allows the visualization and presentation of alternatives that are deeply rooted in practice and theory. These design alternatives or conceptual ideas can be inspirational and spur further creativity and imaginative solutions that address the significant environmental and sociocultural problems we are facing in contemporary societies.

Unlike the research and development (R&D) process, where the creation of an artefact is often an end, in the context of ‘research through designing’, the object does not act as an end, but as a means of exploring and materializing theoretical ideas. The means become the end, the value lies in the activity of doing. In other words, the object no longer represents a finished solution, but serves as a way to ‘crystallize’ and research concepts and strategies through tangible artefacts.

6. Design Explorations: Recontextualization of Objects

‘Research through designing’ or design-centered research, a relatively recent approach in academia, is well-established at the Faculty of Environmental Design, University of Calgary. Design-centered works that have been realized by the authors are presented below. These explore alternative and potentially more sustainable visual languages and cultures in a context where most prevailing examples can be characterized as being rather unsustainable. These latter can, among other things, be expressed through the following elements: pristine, polished and fragile surfaces which become quickly damaged and which also require a heavy reliance on packaging; culturally neutral or bland visual expression for global distribution; fashionable and showy language that, among other things, make consumer goods subject to premature end-of-life (Walker, 2006).

On the one hand, these aesthetics identifiers or typologies are often linked with or reflect unsustainable production and distribution practices and, on the other, they encourage short-term desire and disappointment on the part of the user. Major problems are caused by this pattern, which can be linked to the continuous desire for the new, the pristine, the untouched and immaculate, and the up-to-the-minute thing. These problems range from enormous waste production to unhappiness (Chapman, 2005).

From a sustainable perspective, exploratory design attempts to reconcile various polarities: old and new; valued and unvalued, craft and mass-production; custom and standard; local and global; and diversity within unity. The experimental artifacts illustrate and explore the issues of sustainability, premature end-of-life, and elevation of objects through building new connections between objects and contexts. The work demonstrates design approaches that utilize aesthetic mechanisms or devices that allow out-of-date products to move from unvalued rubbish to valued, durable, and sustainable object solutions that have the possibility to evolve over time. This work looks at mechanisms that allow us to appreciate what we have and it proposes a new understanding of newness through the transformation and reinvention of objects and their context over time.

Figures 1 and 2 respectively show a family of drinking glasses and a set of cutlery pieces designed by Anne Marchand. In both cases, the design intervention questions our current visual culture where, for example, it might be perceived as inappropriate to set up a table with disparate tableware pieces. Through a simple intervention consisting of the application of a permanent red dot on diverse, and therefore valueless, drinking glasses, a family of objects is created. Similarly, a family of objects is formed by applying a permanent, semiopaque red coating on the handles of various cutlery pieces – oddments that all display different formal characteristics. This unifying aesthetic device or mechanism creates

continuity within diversity and elevates those artifacts. A new context is created through a design intervention. Although the aims of this design-centered work is not to propose ready-to-implement solutions but to explore theoretical issues about what we value and the way we look at things, such examples could be viable. Among other things, the concept is adaptable to place and such objects can be easily produced locally.



Figure 1. Red Dots on Drinking Glasses.



Figure 2. Cutlery Pieces with Red Handles.

In these examples, disparate, unvalued goods gain a certain dignity and value through the unifying aesthetic treatment applied directly to the objects themselves, thereby creating a family of objects. Figures 3 and 4, illustrate concepts developed by Stuart Walker in which objects are elevated by creating a new context 'around' the object. The white canvas, synonymous with works of art, gives a new context for functional objects. In the collective memory, the white canvas refers to the white gallery wall and to valuable artifacts. By their physical and conceptual nature, these fully functional prototypes of electronic clocks defy and question traditional ways in which objects are designed and considered. Instead of discarding old objects, and with the ideas of creating evolving products that suggest a fresh and more ecologically sound approach to novelty, a new context playing with object semantics allows for their renewal. Ideas such as design supporting product comprehension, maintenance, and repair by revealing the functioning parts are explored. These white canvas designs illustrate alternative visual cultures that move away from enclosure and *façade*. They research different approaches to product design and product aesthetics based on product affordance. In contrast with many contemporary products that offer few opportunities for comprehending the functioning or form of the inner working, the proposed approach

attempts to render great autonomy to users – things are less intimidating and more inviting when they can be understood and when one has the opportunity to intervene, engage with things and participate.

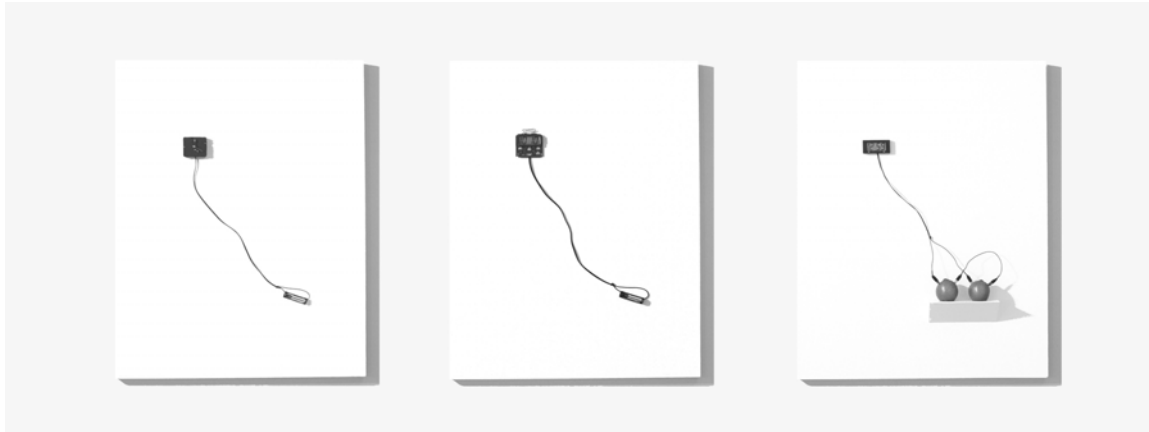


Figure 3. Three White Canvas Clocks. (analogue, digital, and digital powered by fruit 'battery')

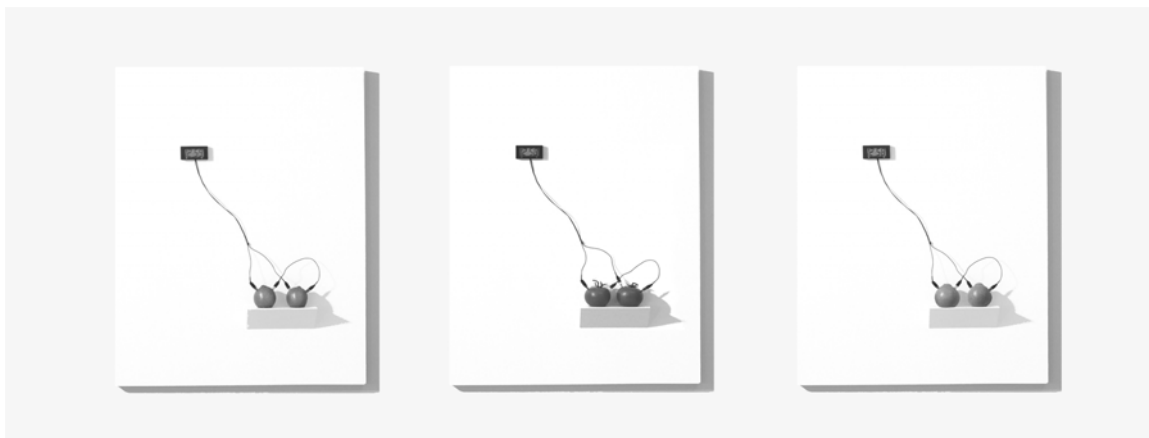


Figure 4. Three White Canvas Fruits Clocks. (with 'batteries' of lime, tomato, and orange)

7. Conclusion

The contribution of the design-centered work presented here starts to indicate new directions with regard to how we design, look, and appreciate things. As mentioned earlier, these objects should not be seen as 'ready-to-implement' solutions, but as reflections illustrated through artifacts. The lesson of such work, and its main contribution, is to prompt reflection on what it can mean to appreciate and revalue the old and discarded. While we know that integrating the principles of *efficiency* and *sufficiency* implies looking at things and valuing them differently, the role of creativity and the contribution of the designer can be significant in furthering this endeavor. This kind of design work challenges us to question our contemporary material and visual cultures and its negative impacts and encourages us to think again about what we have and to relinquish our excessive quest for the pristine, the new, the polished and the homogeneous.

In his book called *Emotionally Durable Design*, Chapman (2005) states that Einstein once said that a problem could not be solved from within the same mindset that created it. As Chapman added, fresh thinking is imperative to solve such problems. This is one of the reasons why design has a crucial responsibility and a meaningful role to play in the development of desirable and viable new aesthetic and social models for sustainability. The design-centered approach seems an appropriate and creative way for design-researchers to engage with the world and to explore, visualize and debate ideas about what type of future we want.

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