Design for (Emotional) Durability
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Introduction

Sustainable design is maturing. In *The Designer's Atlas of Sustainability*, Ann Thorpe refers to this coming of age as the second stage in a debate[1] in which the role of design in economic and social aspects of sustainability is more fully explored, in addition to the already established focus on energy and materials. The sustainability crisis is a behavioral issue, and not one simply of technology, production, and volume. The behavioral conditions that both drive and influence patterns of material consumption are complex, yet fundamental to effective engagement with a contemporary sustainable design agenda. Indeed, until recently, sustainable design methodologies seldom engaged with the more fundamental questions such as the meaning and place of products in our lives, and the contribution of material goods to what might be broadly termed the human endeavor. New, sustainable products must look to instill new meaning and value in a critical area of human endeavor that, in so many ways, has become directionless and superficial.[2] As Fletcher argues in *Designers, Visionaries and Other Stories: A Collection of Sustainable Design Essays*, we are not looking for mass answers, but instead, a mass of answers[3]. This pluralistic approach leads us toward a more nuanced sustainable design culture, in which essential debate begins to unpack, question, and explore new ways of working with issues of sustainability through design. In this polemical context, design is reinvigorated with a rich culture of critique that directly reinstates it as the central pioneer of positive social, economic, and environmental change, instead of a subservient, end-of-pipe problem-solving agency, as has recently become the custom.

Inefficient Practices

The design, production, and consumption of domestic electronic products (DEPs) is fundamentally unsustainable—new approaches are urgently needed. At present, the United Kingdom disposes of 1.1 million tons of DEPs each year (*electronic products* include laptops, MP3 players, mobile phones, digital cameras, etc., as opposed to *electrical products* which include kettles, toasters, refrigerators, washing machines, etc.), and it is forecast that this will double within the next 15 years.[4] During the last decade alone, the consumption of household goods and services in the UK has risen by 67%, and household energy consumption by 7%.

1   Thorpe, A.,*The Designer's Atlas of Sustainability* (Washington, DC: Island Press, 2007), 5.

2   Walker, S., *Sustainable By Design: Explorations in Theory and Practice* (London: Earthscan, 2006), 151.

3   Fletcher, K., "Clothes that Connect" in Chapman, J. & Gant, N., *Designers, Visionaries and Other Stories: A Collection of Sustainable Design Essays* (London: Earthscan, 2007), 118–132.

4   Scottish Environmental Protection Agency, "Producer Responsibility: Waste Electrical and Electronic Equiment (WEEE)," cited on <http://www.sepa.org.uk/producer/weee.htm> (May 6, 2008).

Not only is consumption growing in magnitude, but the throughput of manufactured goods is also developing at a rapid pace.

The urgency of this situation is described in *The Stern Review on the Economics of Climate Change*, which states that if no action is taken to reduce emissions, the concentration of greenhouse gases in the atmosphere could reach double its pre-industrial level as early as 2035, virtually committing us to a global average temperature rise of over 2°C. According to Stern, there would be more than a 50% chance that the temperature rise would exceed 5°C in the longer term. This rise would be very dangerous indeed; it is equivalent to the change in average temperatures from the last ice age to today. Such a radical change in the physical geography of the world must lead to major changes in human geography—where people live and how they live their lives[5]. In 2007, the environmental audit for the United Nations, involving 1,400 scientists, concluded that the speed at which mankind has used resources over the past 20 years has put humanity's very survival at risk.[6]

The human race was fortunate enough to inherit a 3.8 billion-year-old reserve of natural capital, but at present rates of consumption it is predicted as unlikely that there will be much of it left by the end of this century. Since the mid-eighteenth century, more of nature has been destroyed than in all prior history. In the past 50 years alone, the human race has stripped the world of one-fourth of its topsoil and a third of its forest cover. In total, one-third of all the planet's resources have been consumed within the past four decades.[7] Conventionally, industrial activity involves a linear production-consumption system, with built-in environmental deterioration at both ends.[8] In the past 45 years, sustainable design activities have made this waste and inefficiency marginally less wasteful and inefficient.

Product Life, Product Death

Commercial interest in the lifespans of manufactured objects can be traced back to London's introduction of the term *planned obsolescence*,[9] made popular by Packard in his book *The Waste Makers*.[10] Though informed by the work of both London (1932) and Calkins,[11] Packard's dualistic theories of *functional obsolescence* and *psychological obsolescence* assert that the deliberate shortening of product lifespans was unethical, both in its profit-focused manipulating of consumer spending, and its devastating ecological impact through the nurturing of wasteful purchasing behaviors. Today, interest in the lifespans of manufactured objects has become a crucial component of contemporary design discourse.[12] Yet, while the historical discourse is familiar, a tangible and accessible vocabulary is lacking in this context. This lack has contributed to a current state of inertia in both academic and industrial domains, where an absence of language with which to address salient issues of emotional durability and design has inhibited progress.

5   Stern, N., *The Stern Review on the Economics of Climate Change*, New Economics Foundation, London (October 30, 2006).

6   United Nations Environment Programme, 2007.

7   Hawken, P., Lovins, A., and Hunter Lovins, L., *Natural Capitalism: Creating the Next Industrial Revolution* (New York: Little, Brown and Company, 1999), 2.

8   Stahel, W. R., The Product Life Factor, *The Product Life Institute, Geneva*, 1982, accessed at: <http://www.product-life.org/en/archive/publications> (August 10, 2008).

9   London, B., Ending the Depression Through Planned Obsolescence, Pamphlet, US, 1932.

10   Packard, V., *The Waste Makers* (Middlesex: Penguin, 1963).

11   Calkins, E. E., "What Consumer Engineering Really Is," (1932) in *Consumer Engineering: A New Technique for Prosperity*, Roy Sheldon and Egmont Arens (New York: Harper & Brothers), 1–14.

12   Cooper, T., "Durable Consumption: Reflections on Product Life Cycles and the Throwaway Society," in Hertwich, E., (ed.), *Life-cycle Approaches to Sustainable Consumption* (Workshop Proceedings), Austria (November 2002), 15–27.

As Slade explains in his work, *Made to Break: Technology and Obsolescence in America*, disposability was a necessary condition for America's rejection of tradition and our acceptance of change and impermanence. Yet, Slade argues, by choosing to support ever-shorter product lives, we may well be shortening the future of our way of life as well, with perilous implications for the near future.[13] The deliberate curtailment of a product's lifespan has become commonplace today, driven by, for example, a need for cost reductions in order to meet price points, the convenience of disposability, and the appeal of fashion.[14]

As everyday life grows increasingly electronically mediated, it becomes both timely and of growing importance to examine the nature of engagement that we currently encounter with the plethora of DEPs that surround us. Today, empathy is encountered not so much with each other but through fleeting embraces with manufactured—and ever more technologically advanced—artifacts. These *simulations*[15] move away from a sustainable culture of human-to-human engagement, toward a faster culture of human-to-product engagements; contributing to the wasteful and unsatisfactory character of material experience and the lives we construct around it. This shift, away from immateriality and anonymous experience, towards reflexive encounters, is seemingly only the crest of a larger cultural wave that is rapidly imparting greater understanding into the way we perceive, condition, and create the world in which we live. Indeed, the computational and communicative devices that now assist almost every transaction in our daily lives are designed as dull and servile boxes that respond to our commands in a state of neutrality. Stress and technophobia are the result.[16]

Drivers for Change

The search for solutions to these issues are driven primarily by two things: legislative demands brought about by the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive, and the awakening ecological consciousness of consumers and designers who have a growing awareness of our impact upon the biosphere. A significant economic burden will soon accompany this short-term, inefficient model of production and consumption, resulting from legislative breach of the WEEE Directive. This directive addresses concerns about the quantity and hazardous content of electrical and electronic waste going into landfills or being incinerated. It will make it necessary to design products with end-of-life criteria in mind. The WEEE Directive is a significant piece of environmental legislation that requires producers of electronic products to take responsibility for the whole life of their products and to meet given targets for the often prohibitively costly take-back and recycling of all products at end-of-life, at which point it could be argued that the longer life option presents a potentially more economically viable commercial model for industry. Furthermore, the WEEE Directive covers all elec-

13 Slade, G., *Made to Break: Technology and Obsolescence in America*, (Cambridge, MA: Harvard University Press), 2007.

14 Christer, K., and Cooper, T., "Marketing Durability: A Preliminary Review of the Market Potential for Life Span Labels," *Academy of Marketing Conference*, Cheltenham (July 2004).

15 Baudrillard, J., *Symbolic Exchange and Death* (London: Sage Publications, 1993).

16 de Groot, C. H., "Experiencing the Phenomenological Object," in *Closing the Gap Between Subject and Object* (London: Design Transformation Group, 1997), 20–21.

trical and electronic equipment with voltages up to 1,000 AC and 1,500 DC and will affect virtually all producers and manufacturers of electrical and electronic equipment, regardless of company size.

In addition to the legislative demands brought about by the WEEE Directive, an increasingly ethically aware marketplace is also encouraging many producers to review their practices. In the UK, consumers are shopping with a conscience, and determined to buy brands, products, and services that are sustainable, organic, or produced under Fair Trade agreements. According to Raymond and Franklin, 38 percent of male shoppers feel this way, as do 49 percent of female shoppers. And in terms of the brands and products they want to buy, 67 percent revealed that they wanted brands and products that are more trustworthy, value driven (50%), authentic (31%), ethical (31%), eco-friendly (29%) and innovative (28%).[17] In addition, the steady increase in end-of-life legislation and product take-back policies are engaging all corners of the industry[18] in reevaluating the commercial potential for longer lasting DEPs, as a means to deliver ever more sustainable modes of production and consumption. However, amidst this industry-wide push to comply with current and forthcoming environmental legislation, the root causes of the ecological crisis we face are frequently overlooked. Meanwhile, the inefficient consumer machine continues to surge wastefully forth, but now it does so with recycled materials instead of virgin ones.[19] Both the commercial and ecological unrealities of this model must be questioned.

Emotionally Durable Design

Although the need for longer lasting products is widely recognized, practical working methods, design frameworks, and tools that facilitate the development and integration of such emotionally durable characteristics within products are scarce. This may be a consequence of the apparently intangible, ethereal nature of considerations pertaining to psychological function, which cause confusion for the practicing product designer tasked with the design and development of greater emotional longevity in products.

An empirical study, conducted by the author, examined the relationship behaviors of 2,154 respondents with their DEPs during the use phase. Results of this study demonstrated that within the sample frame, value was perceived due to the presence of one of the following six experiential themes; narrative (24%), surface (23%), detachment (23%), attachment (16%), fiction (7%), and consciousness (7%). Of the six distilled experiential themes, narrative was the most common reason given by 526 respondents (24%). It is interesting to note that of the 526 respondents occupying this profile, 341 received their DEP as a gift. Furthermore, although 364 (16%) of the sample population do possess DEPs to which they are emotionally attached, a far greater proportion of the sample frame (84%) perceived value in DEPs for reasons other than emotional attachment.[20]

17 Raymond, M., and Franklin, K., "Endless Possibilities," in *New Design* 44, UK: DWB Associates Ltd. (October 2006), 30-33.

18 Pnueli, Y., and Zussman, E., "Evaluating the End-of-Life Value of a Product and Improving It by Redesign," *International Journal of Production Research*, 35:4 (April 1, 1997), 921–42.

19 Chapman, J., "Modern Life Is Rubbish," *Blueprint* 241 (April 2006) 68–71.

From these results, a *six-point experiential framework* was distilled, providing product designers with distinct conceptual pathways through which to initiate engagement with salient issues of emotional durability and design, and presenting a more expansive, holistic understanding of design for durability—in terms of both the paradigm and the language used to articulate it. The six-point experiential framework (and supporting annotations) is as follows:

Narrative: Users share a unique personal history with the product; this often relates to when, how, and from whom the object was acquired.

Detachment: Users feel no emotional connection to the product, have low expectations, and thus perceive it in a favorable way due to a lack of emotional demand or expectation. (This also suggests that attachment may actually be counterproductive, as it elevates the level of expectation within the user to a point that is often unattainable.)

Surface: The product is physically aging well and developing a tangible character through time and use (and sometimes misuse).

Attachment: Users feel a strong emotional connection to the product, due to the service it provides, the information it contains, and the meaning it conveys.

Users are delighted or even enchanted by the product as they do not yet fully understood or know it, especially with a recently purchased product that is still being explored and discovered.

Consciousness: The product is perceived as autonomous and in possession of its own free will. It is quirky and often temperamental, and interaction is an acquired skill that can be fully acquired only with practice.

The six-point experiential framework presented here generates a grounded theoretical architecture that enables more effective engagement with complex issues of emotional durability and design. By framing specific points of intervention, the six defined pathways facilitate more structured, focused modes of exploration. As a collection of terms, an original territory of inquiry is delineated and defined, while each of the six terms begins to construct an original vocabulary for clearer articulation of the immaterial phenomena that influence product longevity. The six-point experiential framework was presented as evidence at The House of Lords (on February 5, 2008) and examined by the Science and Technology Committee as a part of their "Enquiry into Waste Reduction." The evidence was

20   Chapman, J., "Emotionally Durable Design: Sustaining Relationships between Users and Domestic Electronic Products," PhD thesis (unpublished), University of Brighton (April 1, 2008), 155.

presented within the context of providing product designers with distinct conceptual pathways through which to initiate engagement with emotionally durable design and the WEEE Directive, and examining ways in which products and production processes can be made more sustainable and therefore less wasteful.[21]

Desire and Disappointment

The process of consumption is motivated by complex emotional drivers, and is about far more than just the purchasing of new and shinier things;[22] it is a journey towards the ideal (or desired) self, that, through cyclical loops of desire and disappointment, becomes a seemingly endless process of serial destruction. Material artifacts may thus be described as illustrative of an individual's aspirations and serve to define us existentially. As such, possessions are symbols of what we are, what we have been, and what we are attempting to become,[23] and also provide an archaic means of possession by enabling the consumer to *incorporate*[24] the meanings that are signified to them by a given object. Thus, consumers are drawn to objects in possession of that which they subconsciously yearn to become—the material you possess signifies the destiny you chase. In this way, it can be seen that products are not merely functional, but provide important signs and indicators in human relationships.

Consumer motivation, or the awakening of human need, is unstable—it continually evolves and adapts, whilst the DEPs deployed to both mediate and satisfy those desires remain relatively frozen in time, throughout the product's *use-career*.[25] We become familiar with their greatness and as a direct consequence, our expectation of greatness itself subsequently increases; adoration rapidly mutates into a resentment of a past that is now outdated and obsolete. This common phenomenon of an individual evolving and outgrowing a static product yields intensely destructive implications for the sustainability of consumerism. Furthermore, the dynamic nature of this desire requires a similar approach: the development of dynamic and flexible products.[26]

Conclusions

It is clear that the *design for durability* paradigm has important implications beyond its conventional interpretation, in which product longevity is considered solely in terms of an object's physical endurance, whether cherished or discarded. Perhaps due to the normalcy of innovation, the made world has adopted an expendable and sacrificial persona, rendering its offspring fleeting, transient, and replaceable orphans of circumstance. In the majority of cases, the durability of DEPs is characterized simply by specifying resilient materials, fixable technologies, and the application of product optimization methodologies that reduce the likelihood of blown circuits, stress fractures, and other physical failures. Is this durable product design, or simply the designing of durable waste? Cynically, waste from

21   A full transcript of this session, along with the supporting documentation can be found on: <http://www.publications.parliament.uk/pa/ld200708/ldselect/ldsctech/999/8020511.htm> and the House of Lords Science and Technology Committee's final report, *Waste Reduction*, can be accessed at: <http://www.publications.parliament.uk/pa/ld200708/ldselect/ldsctech/163/163.pdf>

22   Chapman, J., *Emotionally Durable Design: Objects, Experiences and Empathy* (London: Earthscan, 2005), 30

23   Schultz, S. E., Kleine, R. E. and Kernan, J. B., "These are a Few of My Favourite Things: Toward An Explication of Attachment as a Consumer Behaviour Construct," *Advances in Consumer Research*,16 (1989), 359–66.

24   Fromm, E., *To Have or To Be* (London: Abacus, 1979).

25   van Hinte, E., *Eternally Yours: Visions on Product Endurance* (Rotterdam: 010 Publishers, 1997), 53.

26   van Nes, N., and Cramer, J., "Influencing Product Lifetime Through Product Design," *Business Strategy and the Environment*, 14 (Wiley Interscience, 2005), 286-99.

27 Chapman, J., "Desire, Disappointment and Domestic Waste," in *Pavillion Commissions Programme* 2007, Pavillion (Leeds, 2007), 4–11.

DEPs can be seen as an essential means for us to make way for the new. Neither broken nor dysfunctional, these orphans have been cast aside before their time to make way for newer, younger models in an adulterous swing we call consumerism.[27] Though this may be described as nothing more than a Darwinian process of progress-driven obsolescence, the ecological implications of this practice are grave.

The majority of the products that make up today's electronic waste (e-waste) still perform their tasks perfectly in a utilitarian sense. In an emotive sense, however, these unwanted electronics bear an immaterial form of defect, manifest within the relational space occupied by both subject and object. It is this incapacity for evolution and growth that renders most products incapable of establishing and sustaining relationships with users. The waste this inconsistency generates is substantial, coming at increasing cost to manufacturers facing the policy-driven demands of the EU's WEEE Directive and, perhaps more importantly, the natural world. We must therefore begin to consider the emergent paradigm of *emotionally durable design* to propose new and alternative genres of DEPs that reduce the consumption and waste of resources by increasing the resilience of relationships between consumer and product, presenting a more expansive, holistic approach to design for durability, and more broadly, the lived-experience of sustainability.