

# EMOTIONAL DESIGN

Objects, Experiences & Empathy

**JONATHAN  
CHAPMAN**

**SECOND EDITION**



# Emotionally Durable Design

*Emotionally Durable Design* presents counterpoints to our ‘throwaway society’ by developing powerful design tools, methods and frameworks that build resilience into relationships between people and things. The book takes us beyond the sustainable design field’s established focus on energy and materials to engage with the underlying psychological phenomena that shape patterns of consumption and waste.

In fluid and accessible writing, the author asks: why do we discard products that still work? He then moves forward to define strategies for the design of products that people want to keep for longer. Along the way we are introduced to over 20 examples of emotional durability in smartphones, shoes, chairs, clocks, teacups, toasters, boats and other material experiences.

*Emotionally Durable Design* transcends the prevailing doom-and-gloom rhetoric of sustainability discourse, to pioneer a more hopeful, meaningful and resilient form of material culture. This second edition features pull-out quotes, illustrated product examples and comprehensive stand-fists; this book can be read cover to cover, or dipped in and out of. It is a daring call to arms for professional designers, educators, researchers and students in a range of disciplines from product design to architecture, framing an alternative genre of design that reduces the consumption and waste of resources by increasing the durability of relationships between people and things.

**Jonathan Chapman** is Professor of Sustainable Design at the University of Brighton, UK. His research into product life extension has advanced design and business thinking in a range of settings, from Sony, Puma and Philips to the House of Lords and the UN.

To Ming Ming and Jasper

# **Emotionally Durable Design**

Objects, experiences and empathy

SECOND EDITION

Jonathan Chapman



LONDON AND NEW YORK

First published 2015  
by Routledge  
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge  
711 Third Avenue, New York, NY 10017

*Routledge is an imprint of the Taylor & Francis Group, an informa business*

© 2015 Jonathan Chapman

The right of Jonathan Chapman to be identified as author of this work has been asserted by him in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

*Trademark notice:* Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

*British Library Cataloguing-in-Publication Data*  
A catalogue record for this book is available from the British Library

*Library of Congress Cataloguing-in-Publication Data*  
Chapman, Jonathan, 1974-  
Emotionally durable design : objects, experiences and empathy / Jonathan Chapman. --  
Second edition.  
pages cm  
Includes bibliographical references and index.  
I. New products--Environmental aspects. 2. Product life cycle--Environmental aspects. I.  
Title.  
TS170.5.C36 2015  
658.5'75--dc23  
2014029296

ISBN: 978-0-415-73216-1 (hbk)  
ISBN: 978-0-415-73215-4 (pbk)  
ISBN: 978-1-315-73880-2 (ebk)

Typeset in Gill by  
Servis Filmsetting Ltd, Stockport, Cheshire

*'Emotionally Durable Design* poses two key questions: "Why do we throw away products that still work?" and "How can we design products that people want to keep for longer?" Jonathan Chapman analyses our patterns of consumption and waste, and successfully offers strategies and tools which can act as an alternative to our 'throwaway society'. Emotional durability is vital to creating designs that people love and cherish, instead of simply making products to be thrown away. A wonderful and enjoyable read.'

*Marcel Wanders, designer and director, 'Marcel Wanders', The Netherlands*

'Jonathan Chapman dares to think differently about design. His inspiring insights are potentially hugely influential. By unpicking the complex emotions and psychology behind the way we relate to and feel about the objects with which we surround ourselves, he radically reimagines those relationships. Chapman suggests a more powerful, sustainable "story of stuff" – one where design delights and is cherished once again. Compelling, convincing and credibly evidenced, this is a very important book.'

*Ed Gillespie, co-founder, Futerra Sustainability Communications, UK*

'Applying Jonathan Chapman's philosophy of emotional durability has helped our team to rethink not only the type of products that can be developed in the future but also the role they can play in our ever-changing world. In this second edition his rationale for environmental change is eloquently powerful and it is supported with new insights and product examples that are inspiring and motivational.'

*Dr. Jon Mason - design researcher, Philips, The Netherlands*

'*Emotionally Durable Design* provides intelligent and accessible perspectives on how design can be valued beyond market forces. Highlighted are more resilient relationships between people and material things, as well as new sustainable business models for longer lasting products. Already influential on design professionals, academics, and governments, this welcome second edition is essential reading for anyone concerned about the current and future roles and responsibilities of design and the worlds it inhabits.'

*Hazel Clark, PhD, Professor, Design Studies and Fashion Studies,  
Parsons The New School for Design, USA*

'*Emotionally Durable Design* offers a profoundly original view on sustainability by shifting our focus from the durability of products to the durability of consumer-product relationships. With six opportunities to foster empathetic bonds between users and their products, Jonathan Chapman shares his uplifting vision on durability that puts the mystery and wonder back into design, revealing how sustainable design can be a central pioneer of positive social change.'

*Pieter Desmet, Professor, Design for Experience, Delft University, The Netherlands*

*This page intentionally left blank*

# contents

<b>List of figures</b>	<b>xi</b>
<b>Preface</b>	<b>xiii</b>
<b>Acknowledgements</b>	<b>xv</b>
<b>Chapter One The progress illusion</b>	<b>1</b>
<i>Ecological awakenings</i>	1
<i>Pressure on resources</i>	4
<i>Design for sustainability?</i>	7
<i>Consumption and waste</i>	10
<i>Planned obsolescence</i>	12
<i>Sustainable design can be symptom focused</i>	13
<i>Tweaking typologies</i>	16
<i>The myth of individuality</i>	17
<i>Jamming creativity</i>	18
<i>How to guarantee disappointment</i>	19
<i>Chasing unattainable destinies</i>	21
<i>Emotionally durable design</i>	21
<i>Meaningful stuff</i>	22
<i>Waste is symptomatic of failed relationships</i>	24
<i>Anthropocentrism</i>	26
<i>About-face</i>	29
<b>Chapter Two Consumer motivation</b>	<b>31</b>
<i>Consumption is natural</i>	31
<i>The material you possess is the destiny you chase</i>	32
<i>The dark side</i>	33

## CONTENTS

<i>Statistics impose a paralysing vastness</i>	35
<i>Conceptualizing the act</i>	36
<i>When aren't we consuming?</i>	39
<i>Need</i>	41
<i>Object meaning</i>	42
<i>Having and being</i>	47
<i>Mapping need</i>	49
<i>Maslow reconsidered</i>	49
<i>The crisis of individual evolution</i>	51
<i>Flocking behaviour</i>	53
<i>Beating down the wilderness</i>	54
<i>The deflowering gaze of familiarity</i>	58
<i>The mirror stage</i>	59
<i>Ego</i>	59
<i>Empathy has a lifespan</i>	61
<i>Metaphysical versus physical</i>	62
<b>Chapter Three Attachments to objects</b>	<b>63</b>
<i>Little treasure</i>	63
<i>The dawn of material culture</i>	65
<i>The cultural Big Bang</i>	66
<i>Toward individualism and materialism</i>	67
<i>Desire and disappointment</i>	70
<i>The honeymoon period</i>	72
<i>From honeymoon to the daily grind</i>	75
<i>Growing together</i>	75
<i>Love</i>	78
<i>A streamlined world</i>	79
<i>Designing dependency</i>	81
<i>Feedforward and inherent feedback</i>	82
<i>Fuzzy interaction</i>	83
<i>Pace</i>	84
<b>Chapter Four Authors of experience</b>	<b>87</b>
<i>User experience</i>	87

<i>Naughty, naughty</i>	91
<i>Authoring experience</i>	95
<i>Primitives in complexity</i>	99
<i>Experience and emotion</i>	101
<i>Immersive experience</i>	107
<b>Chapter Five Sustaining narrative</b>	<b>113</b>
<i>Newness</i>	113
<i>Durable narrative experience</i>	114
<i>Just noticeable difference</i>	115
<i>Creator and creature</i>	116
<i>The teddy bear factor</i>	121
<i>To cut a short story long</i>	122
<i>Storytelling</i>	122
<i>A timeless fascination</i>	125
<i>Layers of narrative</i>	127
<i>Smooth morphic shifts</i>	128
<i>Growing old gracefully</i>	130
<i>Ageing material surfaces</i>	133
<i>Against the 'box-fresh' ideal</i>	134
<b>Chapter Six De-fictioning utopia</b>	<b>137</b>
<i>The problem with utopia</i>	137
<i>Design is utopian</i>	139
<i>Fiction</i>	140
<i>The need for fiction</i>	141
<i>Consumption is a process of de-fictioning</i>	142
<i>Deflowering</i>	143
<i>Sustaining fiction</i>	143
<i>Consciousness</i>	144
<i>Through an individually polished looking glass</i>	147
<i>Phantile drives</i>	149
<i>Omnipresent phantile drives</i>	150
<i>Space</i>	152
<i>Foreignments, placebo realities and jolts</i>	153

## CONTENTS

<b>Chapter Seven Real-world feasibility</b>	<b>157</b>
<i>The vision</i>	157
<i>The real world</i>	158
<i>An outdated model</i>	160
<i>Sustainable design is unresolved</i>	164
<i>The cost of environmental unawareness</i>	169
<i>A six-point framework</i>	174
<i>Producer and consumer</i>	176
<b>Notes</b>	<b>181</b>
<b>References</b>	<b>195</b>
<b>Index</b>	<b>203</b>

# list of figures

<b>1.1</b>	We are all a part of the same thing	3
<b>1.2</b>	Orphaned products	11
<b>1.3</b>	The pragmatist toaster	14
<b>2.1</b>	Scratched tech	38
<b>2.2</b>	1780s George III commode	40
<b>2.3</b>	Collective spirit	45
<b>2.4</b>	Shape-shifting phone	52
<b>3.1</b>	Little treasure	64
<b>3.2</b>	Clampix	73
<b>3.3</b>	Tripp Trapp ®	77
<b>3.4</b>	365 Knitting clock	85
<b>4.1</b>	Underfull tablecloth	90
<b>4.2</b>	Shelves for life	93
<b>4.3</b>	Twist my legs	102
<b>5.1</b>	Denim jeans	117
<b>5.2</b>	Polymer 'cork' brogues	123
<b>5.3</b>	Flip Flopsum and Jetsum	129
<b>5.4</b>	Stain teacups	132
<b>6.1</b>	Wandular	139
<b>6.2</b>	Reunification cutlery	154
<b>7.1</b>	Reveal sneakers	163
<b>7.2</b>	Sugru	166
<b>7.3</b>	The optimist toaster	177

*This page intentionally left blank*

# **preface**

This book presents strategic counterpoints to our ‘throwaway society’ by developing design tools, methods and frameworks that enhance the resilience of relationships established between consumers and their products. The book engages with two essential questions: why do we throw away products that still work, and how can we design products that people want to keep for longer?

Since the first edition was published in June 2005, the term ‘emotional durability’ has been adopted by designers, students and educators around the world, providing valuable shorthand for the complex and manifold factors that determine the endurance of ‘value’ and ‘meaning’ in a given object.

The book has been widely adopted by professional designers at some of the world’s largest design-led corporations including Puma, Sony and Philips. The ideas put forward in this book have helped to shift the values and practices of these global businesses – helping them to cut waste and enhance product, material and brand value. In addition to being core reading at many of the world’s leading design schools, the book has informed design and environmental policy debates at the House of Lords.

The theory of emotionally durable design continues to propel the sustainable design field beyond its established focus on energy and materials, toward a deeper engagement with the psychosocial phenomena that shape patterns of consumption and waste.

*This page intentionally left blank*

# acknowledgements

I would like to acknowledge a number of individuals for their insight, wisdom and support throughout the development of this book. My friends and colleagues at the University of Brighton: Nick Gant, Professor Jonathan Woodham, Professor Anne Boddington, Professor Bruce Brown and Phil Mills. I would also like to thank the individual designers who have kindly agreed to their work being featured in this book and the team at Routledge, in particular Fran Ford for her essential guidance and input. Finally, I would like to thank my wife Ming Ming and son Jasper for their patience, understanding and support throughout the research, development and writing of this book.

*This page intentionally left blank*

# chapter

## one

### the progress illusion

*Human destruction of the natural world is a crisis of behaviour, not simply of energy and material. It is about people, the choices we make and the dreams we chase.*

#### **Ecological awakenings**

In 1966, the National Aeronautics and Space Administration (NASA) delivered to the world the first photographic images of our planet from outer space; and for the first time in human history, we experienced

the Earth as a holistic and self-supporting organism, peacefully suspended in the dark silence of space. We witnessed with our own eyes the Earth's protective atmosphere, and we were jolted by the evident fragility of this blue gaseous membrane proportionally similar in depth to 'a coat of paint around a football'.<sup>1</sup>

*The Earth's atmosphere is as thick as 'a coat of paint around a football'.*

Astronauts, while viewing the Earth from space, have reported a similar cognitive shift in awareness – an experience known as the 'overview effect'. Back down on

## THE PROGRESS ILLUSION

the Earth, the social shockwave that resulted from this uncomplicated revelation – exposed via television, newspapers, cinemas, etc. – gave birth to a new and socially accessible appreciation of the natural environment. The world's largest environmental organization – Friends of the Earth – was founded three years later, closely followed by Greenpeace in 1971. From the early 1970s, the output of environmental legislation and transnational policies also grew, placing increasing pressure on designers and manufacturers to improve their standards.

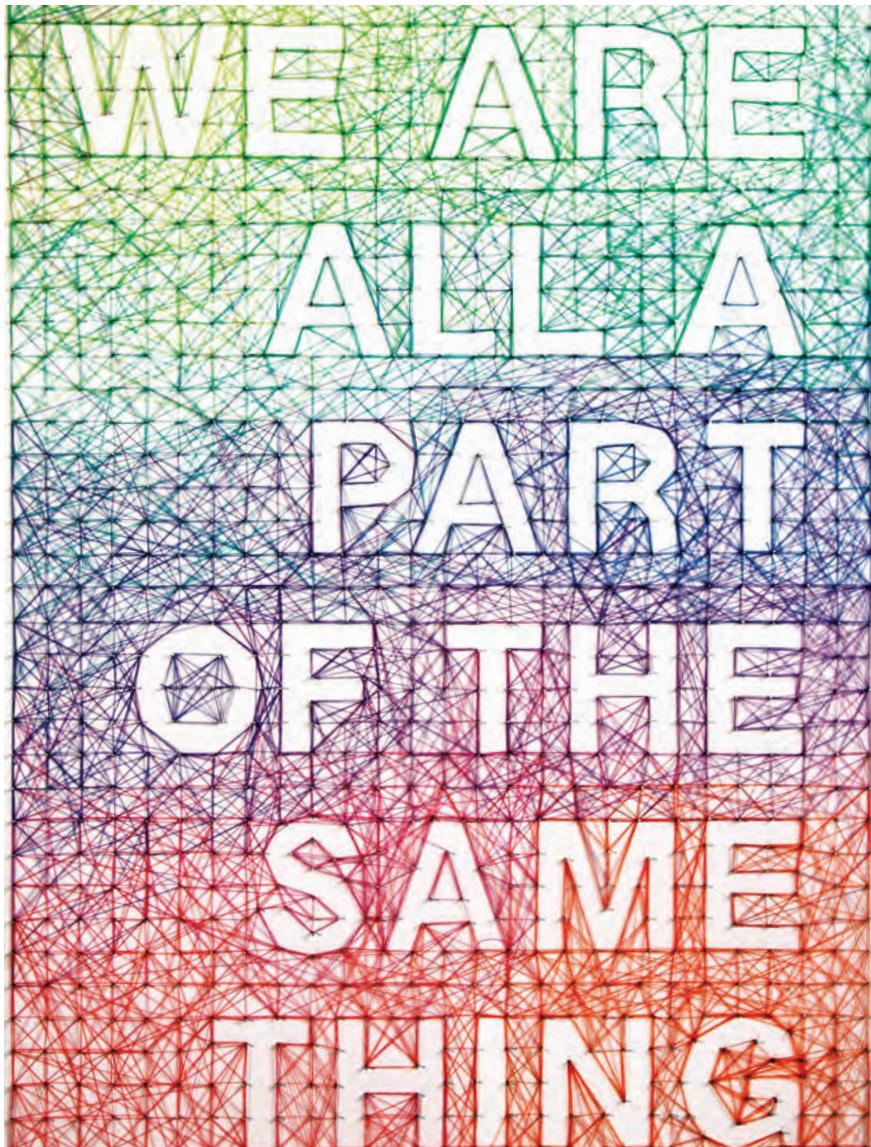
Today, public consciousness of the human destruction of the natural world is almost tacit, and few would argue that a dramatic reappraisal of developed-world production and consumption methods is imperative. Indeed,

proving that the Earth's climate is changing from human actions is like statistically 'proving' the pavement exists after you have jumped out of a 30-storey building. After each floor your analysis would say 'so far – so good' and then, at the pavement, all uncertainty is removed.<sup>2</sup>

Some might refer to the space mission in 1966 as having provided the greatest ecological awakening in modern history. Undoubtedly, it assisted significantly in the societal comprehension of new ecological models and theories, one of these being the Gaia hypothesis – so named after the Greek goddess of the Earth, Gaia – which provides an inclusive glance at life on Earth. In *Gaia*, environmental scientist James Lovelock puts forward the theory that the Earth is a 'tightly coupled process from which the self-regulation of the environment emerges'.<sup>3</sup> His theory, made public in 1968 at a conference regarding the origins of life on Earth, might well be viewed as a logical continuation of Charles Darwin's theories of evolution by natural selection, except that Lovelock classifies animals and inanimate entities within a single category. Gaia theory embeds itself within the correlations between all matter on Earth and, in this respect, resembles ancient Celtic and other holistic, animistic depictions of human situatedness within nature.

Other hypotheses differ greatly in sentiment to Gaia, such as that of French-born American microbiologist, environmentalist and author Rene Dubos, and that of Garret Hardin. Dubos powerfully expresses the concept of man as a 'steward' to life on Earth, in governmental symbiosis with it, like a supreme gardener for the entire world.<sup>4</sup>

*Mankind acts out a great tragedy which may lead to his own destruction.*



**Figure 1.1**

**We are all a part of the same thing**

*Ecology is everything, and we are an essential part of that everything. This tactile typography shows the beautiful complexity of these synergetic relationships.*

Source: Dominique Falla, 2011

Photograph by Alejandra Ramirez Vidal

## THE PROGRESS ILLUSION

Hardin, on the other hand, a highly trained ecologist and microbiologist, sees mankind as acting out a great tragedy that may lead not only to his own destruction but to that of the whole world. In 1968, he described this theory with great detail in an essay entitled 'The tragedy of the commons'<sup>5</sup> in which he draws comparison between planet Earth and the village common. This analogy is founded on the basis that they are both ecosystems, each of which must live within certain limits – the tragedy being that each villager who uses the common sees only their own impact and never the overall spatial effects of the village population as a whole.

One does not need to be an ardent environmentalist to see that there is little or no logic to the way we relate to our environment. We clear carbon-absorptive forests to grow methane-producing meat, and we smother vast areas of biodiverse wilderness with ecologically inert urban sprawl, riddled with mazes of oil-dependent highways. Examples like these are commonplace, and one could easily fill an entire chapter with just such horror stories. However many examples you come across, one thing connects them all: they are each the result of an outmoded economic paradigm in which ecological systems are assigned zero monetary value. In the 'natural capital' model,<sup>6</sup> the world's economy is located within the larger economy of natural resources and ecosystem services that sustain all life, including us. This indicates that we should attribute value to things such as hydrocarbons, minerals, trees and microscopic fungi, in addition to human resources, skills, buildings and energy.

*We clear carbon-absorptive forests to grow methane-producing meat.*

### Pressure on resources

Many practitioners claim that our destructive and unsustainable harvesting of this planet's limited reserve of natural resources is due to an escalating human population, founded on the simple premise that more people – essentially – need more materials to support their existence. This is not actually the case: 'over the last 50 years the world's population has increased by over 50 per cent; but our resource utilization has increased by more than 1,000 per cent for the same period'.<sup>7</sup> These statistics demonstrate that increased population is not so directly coupled with increased resource consumption, as is often assumed. It would be more accurate to say that, although an increase in human population will bring an obvious increase in resource consumption, the mess we are in today is more likely to be a result

of unsustainable developments in the way we design, manufacture and consume objects in the modern world. It is therefore short-sighted to blame the demise of natural resources simply on a rise in population, when it is so evidently not the case.

Pressure and competition for space upon the Earth is in constant flux; an ebb and flow of populations – animal, vegetable and mineral – wash in and out of space the moment an opportunity arises. The rules of spatial pressure operate in this way by placing uneven pressure on the immediate environment, which forces vast tides of biomass to surge and boil in reaction to disharmony. As discussed earlier in *Gaia*, this eternal struggle has always been in progress and always will be – this is the way of the natural world. French librarian and writer Georges Bataille, when speaking of such pressure, states that any life form will always expand in number, or size, to fill the space that it has, and only when critical mass has been reached will growth level off. He illustrates this theory with the microorganism duckweed: 'It has a drive to cover any pond with a green film, after which it remains in equilibrium.'<sup>8</sup> The only change likely to occur will happen when an outside factor affects the equation, such as a tree falling into the pond or heavy rainfall that doubles its surface area. Life is opportunist and may proliferate under the most obscure circumstances; in the words of Bataille, 'life occupies all the available space'.<sup>9</sup>

Never static, ecological systems are flux-spaces that adapt and morph in response to shifts in environmental condition. They strive toward stasis – a state of stability in which all forces are equal and opposing, and therefore they cancel each other out. For example, when atmospheric levels of CO<sub>2</sub> rise in a particular region, vegetation grows more quickly; yet as this vegetation thrives, it absorbs more CO<sub>2</sub> and, consequently, atmospheric levels of this trace gas fall. These cybernetic processes, consisting of sensory, comparative and activating components, are central to understanding the way dynamic systems establish, automate and change over time.

In seeing ourselves as beyond this 'ecological consciousness', we have broken partnership with the biosphere, developing alien practices, processes, materials and lifestyles that far exceed the Earth's regenerative capacities.

*Life is opportunist, pushing out into available space.*

*We have severed partnership with the ecological systems that support all life.*

## THE PROGRESS ILLUSION

Owing to the broad range of extreme conditions that can be found on this small planet, most humans do not actually occupy all available space. Vast expanses of the globe are currently uninhabited due to inhospitable conditions, such as the altitudinal excesses found in the upper Himalayan regions of Nepal or, perhaps, the geological instability of the sulphurous lava plains of the Reykjanes Peninsula in Iceland. However, even in places that are considered to be so inhospitable, there are usually a few well-dressed scientific researchers to be found. For example, Vostok, Antarctica, is the home of some of the coldest temperatures recorded on Earth, sometimes reaching a bitter  $-89^{\circ}$  Celsius ( $\text{C}$ ); there is an inhabited Russian research base there, where it is reported that the temperature regularly dips below  $-60^{\circ}\text{C}$ .

Human population currently stands at 6.13 billion persons and is growing at 1.33 per cent per year, or an annual net addition of 78 million people. It is further projected that world population will reach 9 billion in 2050:

According to US Census Bureau estimates, [w]orld population hit the 6 billion mark in June 1999. This figure is over 3.5 times the size of the Earth's population at the beginning of the 20th century and roughly double its size in 1960. The time required for global population to grow from 5 to 6 billion – 12 years – was shorter than the interval between any of the previous billions.<sup>10</sup>

A tremendous change occurred with the Industrial Revolution:

Whereas it had taken all of human history until around 1800 for world population to reach one billion, the second billion was achieved in only 130 years (1930), the third billion in less than 30 years (1959), the fourth billion in 15 years (1974), and the fifth billion in only 13 years (1987).<sup>11</sup>

These statistics demonstrate that human population is not only growing but also gathering considerable speed along the way. In a study that Rem Koolhaas – hailed by many as one of the most influential architects of our time – conducted with students at Harvard University, it was discovered that

the city of Shenzhen near Hong Kong is growing at a rate of 2 square kilometres per year: at 'this pace an architect can afford only two days to design an entire skyscraper'.<sup>12</sup> Population growth alone is not a problem for planet Earth; there are vast expanses of uninhabited land that excess population

*Population growth alone is not the problem.*

could spread to. However, the growth of a species whose presence has negative impacts on all other life must be seen as a potential ecological crisis. Excess pressure on resources is one of the lamentable side effects of overpopulation.

We lead a resource-hungry existence, taking out a great deal more from the Earth than we put back:

Even bearing in mind a very loose definition of development, the anthropocentric bias of the statement springs to mind; it is not the preservation of nature's dignity which is on the international agenda, but to extend human-centred utilitarianism to posterity.<sup>13</sup>

Resources – as we like to call matter for which we have a commercial use – are being transformed at a speed far beyond the natural self-renewing rate of the biosphere. Consequently, reserves of useful matter are running low, and many will soon have vanished or, more likely, become so scarce that it is no longer cost-effective to

extract them from the earth. 'The human race was fortunate enough to inherit a 3.8 billion-year-old reserve of natural capital.'<sup>14</sup> 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 18th century, more of nature has been destroyed than in all prior history.'<sup>15</sup> During the past 50 years alone, the human race has stripped the world of a 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.'<sup>16</sup>

*Resources are matter for which we have a commercial use.*

## Design for sustainability?

The designing of new lifestyles running in tighter synchrony with natural systems was first credibly proposed as far back as the thirteenth century. German theologian Meister Eckhart frequently conceptualized the Earth as a fragile and sensitive resource affected by human endeavour; so concern for the natural environment is anything but a contemporary malaise. During the early 1800s, upper-class lovers of the great outdoors were among the first to balk at the timber industry's brutal harvesting of ancient woodlands. Yet their cries were motivated by aesthetic values rather than by a threat to local biodiversity or the loss of natural air filtration per se.

*Environmental concern dates back to the thirteenth century.*

## THE PROGRESS ILLUSION

In late nineteenth-century Britain, at the dawn of the decadent Arts and Crafts period, early connections between emergent cultures of superfluous materialism and environmental decay were acknowledged. The extravagant modes of consumption spawned by the prolific pace of post-Industrial Revolution manufacturing

*Post-Industrial Revolution rates of consumption caused concern.*

were steadily corrupting the biosphere, causing growing concern for the more enlightened industrialists. In time, these sentiments began to percolate into the creative practice of design luminaries such as Charles Eames, Frank Lloyd Wright and Richard Buckminster Fuller. The works of these and a handful of other early revolutionaries, including William Morris and Marcel Breuer, provide living testimony of the design industry's first tentative steps toward a sustainable future.

During the last 50 years, countless strategic approaches to sustainable design, from the bizarre to the banal, have proliferated. The sheer diversity of strategies within the sustainable designer's toolbox illustrates both the multifaceted nature of the environmental paradigm and the vast range of approaches taken by designers today. Many of these approaches focus purely on specific stages of the product life cycle; these are generically referred to as Design for X (DfX) strategies. DfX strategies, including design for disassembly, design for recycling and design for reuse, are increasingly deployed by the white goods, electronics and automotive sectors where legislative demand for waste minimization is

mounting fast. Other common strategies include alternative energies, from solar to human power; sourcing local materials and processes; collapsible objects to conserve landfill space; supply chain management; zero emissions; compostable products; and a growing left-field interest in edible packaging, to name but a small handful.

*Design is a human phenomenon that shapes the world around us.*

As a cultivated form of invention, design is a deeply human phenomenon that shapes, modifies and alters the world around us – for better or worse. The emergence of the sustainability space, in design research and practice, invites us to recalibrate the parameters of good design in an unsustainable age. As a sustainable designer, you contribute to the shaping of this dynamic and emerging field that recalibrates the parameters of 'good design' in an unsustainable age – prospecting, seeding and activating the power of design in creating social, economic and ecological resilience in an increasingly unstable world.

This emergent space advances and broadens the agenda of the 'design system' such that it is fit for purpose in tackling the thorny, emerging challenges facing us today. Tomorrow's sustainable design leaders will continue this broadening, using design thinking to create and apply visionary frameworks, engage at both product and system level, and work across disciplines and sectors. Such transdisciplinary approaches will be vital to unravelling the 'Gordian knots' of sustainability.

*Transdisciplinary approaches unravel the 'Gordian knots' of sustainability.*

Design has a broad epistemological base, drawing together different forms of knowledge (economic, scientific, social, medical and cultural, for example); converging around the locus of design agency, it is a means to identify ways that we reconsider and know the world better and contribute to its advancement. This approach reframes design as both a prospective and transformative activity, underpinned by a rich repertoire of tools, methods and approaches that strengthen the transformative power of design to establish a clear social, economic and ecological purpose.

*Sustainable design prospects, seeds and activates.*

Over the past decade, consumers have become increasingly aware of the social, environmental and personal implications of their purchasing decisions. Research carried out by *ES Magazine* shows that 75 per cent of consumers claim to favour products with tangible environmental advantages over competing products:

Three-quarters of the people polled in the UK say that they would make a choice of products on a green or ethical basis, and 28 per cent say that they actually have chosen or boycotted a product or company for ethical reasons over the past 12 months.<sup>17</sup>

This indicates that the future survival of many large brands will become increasingly dependent upon both the delivery and perceptibility of eco-conscious practices and products. *ES Magazine* then goes on further to state that 86 per cent of British consumers say that they have a more positive image of a company if they see it doing something to make the world a better place. Significantly, 56 per cent of those

*Consumers favour products with tangible environmental improvements.*

## THE PROGRESS ILLUSION

aged 18 to 25 state the importance of finding brands they can be loyal to and develop lasting relationships with.<sup>18</sup>

Sustainable design is no longer regarded by the wider creative industry as a whimsical mutation of design proper, and environmental factors such as design for disassembly and the specification of low-impact materials are increasingly integrated into conventional design practice without ceremony and to reasonably lucrative ends. In addition, we now know that sustainability is compatible with economic growth, and we should begin to push this notion forward with far greater confidence. In 1999, the Dow Jones Sustainability Group Index was set up to track shareholder value in companies that integrate both environmental and economic factors. The pilot analysis suggested that 'efforts to promote environmental sustainability do not have to come at the expense of competitiveness'.<sup>19</sup>

The UK Government recently proposed the goal of an economy where resources are used sustainably through 'design for longer life, upgrading, re-use or repair', encouraging companies to '[d]esign and manufacture goods that are more efficient, durable, repairable and recyclable'.<sup>20</sup> Longer-lasting products have the potential to present 'robust economic models for creating products, services and brand-loyal customers – driving future sales, upgrade, service and repair'.<sup>21</sup>

*The UK Government encourages the design of longer-lasting products.*

## Consumption and waste

The rampant consumption and waste of natural resources so prevalent in the developed world is a legacy of modern times, born largely from the inappropriate marriage of excessive material durability with fleeting product-use careers. 'Some products are discarded before they are physically worn out or are technically superseded because their design is out of fashion or inappropriate to changed circumstances'.<sup>22</sup> In other words, the injection-moulded styrene shell that houses the electronic components for an iPod will take about 500 years to degrade fully before slowly returning back to the Earth's energy cycles. Yet we are all aware that even a four-year use career might be

*We design excessive material durability into short-lived products.*



**Figure 1.2  
Orphaned products**

*Queues form outside waste disposal sites – consumers clearing the way for their latest purchase, dumping items they queued to acquire just months before.*

Source: Jonathan Chapman, 2008

*Photograph by author*

considered a triumph in the case of such a format-dependent product. Like its jilted CD-playing predecessors, the iPod is likely to touch landfill only two or three years after leaving the production line – a short life indeed for such a durable object.

In the words of Deyan Sudjic – Director of London's Design Museum – 'we live in a world drowning in objects'.<sup>23</sup> Never before have we wanted, consumed and wasted so much. Despite growing levels of environmental awareness among businesses and consumers, e-waste is growing at three times the speed of any other form of waste in the EU.<sup>24</sup> Almost 40 tonnes of waste are produced for each tonne of products made; users discard 98 per cent of these finished products within just six months of purchase.

*We live in a world drowning in objects.*

*On average, almost 40 tonnes of waste are produced for each tonne of products made.*

Employing hazardous substances, conflict minerals and energy-intensive production processes, the waste this process generates is highly problematic. Rapidly rising consumption in newly industrialized countries such as China, India and Brazil puts further stress upon the global environment.<sup>25</sup> The vast majority of resources taken out of the ground today become waste within only three months: waste consisting of plastics, metals and other synthetic compounds no longer recognizable to the microbial decomposers that degrade substances back to their basic nutritional building blocks.

An apt example of this manner of natural resource transformation is oil. Oil is a substance that will degrade in its original state but becomes an unstable biohazard once turned into plastic, which has been projected to take as long as 4,000 years, in some cases, to degrade fully. Even biodegradable waste such as paper, wood and other vegetable-based compounds escapes decomposition as overloaded landfills lack the correct mix of water, oxygen and light for nature's microbial banquet to occur. 'In anthropological studies of the Fresh Kills Landfill Site in New York, hotdogs, corncobs and newspapers that were 25 years' old were still in recognizable form, and the newspapers were readable.'<sup>26</sup> It therefore appears clear that biodegradability – although a theoretically bright idea – rarely functions on the mass scale that we expect it to.

*Landfills lack sufficient water, oxygen and light for nature's microbial banquet to occur.*

### Planned obsolescence

Since 1932, when Bernard London introduced the term 'planned obsolescence',<sup>27</sup> made popular by Vance Packard in his monograph *The Waste Makers* (1963),<sup>28</sup> interest in the lifespans of manufactured objects has steadily become a crucial constituent of contemporary design discourse.<sup>29</sup> Yet despite the pervasiveness of this insightful notion, thus far, the creative methodologies addressing design for durability have attended almost exclusively to the cosmetic, bodily survival of manufactured objects. In these somewhat superficial scenarios, durability is distinguished merely by a product's physical endurance – whether cherished<sup>30</sup> or discarded; lab-coated engineers triumphantly exchange high fives as fully operational hairdryers emerge from a

*Planned obsolescence was first proposed in 1932.*

five-year landfill hiatus. Is this durable product design or simply the designing of highly durable waste?

'[I]t is not always easy for consumers to identify products designed for long lifespans'<sup>31</sup> but durability is just as much about desire, love and attachment as it is fractured polymers, worn gaskets or blown circuitry. As a direct consequence, landfills are packed with stratum upon stratum of durable goods that slowly compact and sur- render working order beneath a substantial volume of similar scrap. It therefore appears clear that there is little point designing physical durability into consumer goods if consumers lack the desire to keep them.

The UK alone sends 1.25 million tonnes of such electronic waste (e-waste) to landfill each year<sup>32</sup> – waste consisting of fully functioning toasters, refrigerators, mobile phones, vacuum cleaners and a whole host of other products that still function perfectly in a utilitarian sense; 'each year it is estimated that around 5 million opera- tional TVs hit landfill'.<sup>33</sup> Indeed, most consumer products are not supposed to have a future, apart from being predecessors to the next in line.<sup>34</sup> In 1982, the Organization for Economic Co-operation and Development (OECD) produced its report *Product Durability and Product Life Extension*, but, again, little practical action followed.<sup>35</sup>

The prevailing industrial model of the time prescribed the transient and grossly inefficient system of consumption that we fumble through today. Consumers of the 1980s were not born wasteful; they were trained to be so by the sales-hungry teach- ings of a handful of industries bent on market domination. It is tragic to note that the effects of these twentieth-century teachings live on today through our wastefully short-term engagements with the made world.

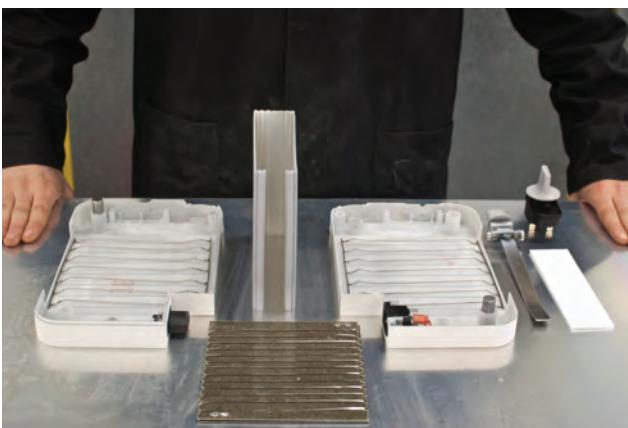
### Sustainable design can be symptom focused

Despite diversity, many sustainable design methodologies can lack philosophical depth, adopting a symptom-focused approach comparable with that of Western medicine. Many health-care professionals candidly admit that Western medical prac- tice is frequently more concerned with the suppression of undesirable symptoms than

*There is no point designing durable products if users lack the desire to keep them.*

*We are not born wasteful; capitalism trains us to be so.*

*See beyond symptoms of problems to address their underlying causes.*



**Figure 1.3**

**The pragmatist toaster**

*A modular toaster in which individual slots clip together to form any size of toaster. Broken slots are simply unclipped and returned to the manufacturer for repair.*

Source: The Agency of

Design, 2005

Photographs by The

Agency of Design

with the actual restoration of health. If a patient has a headache, for example, a Western doctor will most likely prescribe drugs to mask the pain with little regard to what may be causing the discomfort. Experienced Chinese medical practitioners state that over 50 per cent of headaches are caused by the body's inability to detoxify as a result of mild dehydration and are, thus, curable by simply drinking a large glass of water. For decades, the developed world's consumer machine has raged forth practically unchanged, leaving designers to attend the periphery, healing mere symptoms of what is, in essence, a fundamentally flawed system.

Amid the frantic scramble to comply with growing legislative demands, the root causes of the ecological crisis that we face are frequently overlooked. Meanwhile, consumers continue wastefully on, but do so, now, with recycled materials instead of virgin ones. Although advantageous in a number of scenarios, recycling alone is not a one-stop solution to sustainable production and consumption; it represents only a small part of a far wider picture. Many researchers are beginning to suspect that recycling actually provides an ethical 'get-out-of-jail-free card', which liberates consumer conscience and, in so doing, generates even more waste. 'Eco-design limits itself to an environmental technological approach and recycling is sometimes even an excuse for more rapid discarding.'<sup>36</sup>

Sustainable design has developed a tendency to focus on the symptoms of the ecological crisis rather than the actual causes. In consequence, deeper strategic possibilities are overlooked which, if developed, might build further value into existing creative methodologies. By failing to understand the actual drivers underpinning the human consumption and waste of goods, sustainable design resigns itself to being a peripheral activity rather than the central pioneer of positive social change that it potentially could be.

Commercial focus needs to shift away from the symptoms of our environmental crisis and to engage with the underpinning behavioural phenomena that shape patterns of consumption and waste.

*Recycling can encourage wastefulness.*

*Designers could be pioneers of positive social change.*

### Tweaking typologies

Through a wide-eyed affection for all things new, mainstream industrial design has become technocentric, incorporating contemporary technologies within archaic product typologies – a skin-deep discipline devoid of rich content that packages culture into slick consumable bytes, streamlined with synthetic polymers and metals:

*Design tends to put new technologies within archaic product typologies.*

We do amazing things with technology, and we're filling the world with amazing systems and devices; but we find it hard to explain what this new stuff is for, or what value it adds to our lives. I don't think we can evade these questions any longer. . . . Do all these chips make for better products? Or a better life? Let me tell you a strange thing. Hardly anyone is asking that question. When it comes to innovation, we are looking down the wrong end of the telescope: away from people, toward technology. Industry suffers from a kind of global autism. Autism, as you may know, is a psychological disorder that is characterized by detachment from other human beings.<sup>37</sup>

Like moths around a flame, we are hopelessly seduced by the incandescent glow of all things modern, be it a flatter screen or a smarter plastic, while remaining largely oblivious to the astonishing potential lurking within deeper, poetic, semantic and interactive product developments.

Technological innovation is a vital element of the developmental design process; yet in recent years, it has taken centre stage at the expense of other less tangible, although equally potent, creative considerations. In so doing, technocentric design has inadvertently authored a grossly transient culture of wasteful consumerism burdened with the unattainable task of

*We struggle to maintain closeness to the technological state of the art.*

sustaining closeness to the state of the art. Because everything moves so fast, and we cannot stop it, we have to create some islands of slowness. Design, in all its history, but especially in more recent years,

*We need to create some islands of slowness.*

has been an agent of acceleration. Is it possible to conceive of solutions combining real-time interactions with the possibility of taking time for thinking and contemplation?<sup>38</sup>

Designers are not solely responsible for today's restless culture of continually tweaking product typologies; consumers also possess ardent interest in technological artefacts, not only for their utilitarian capabilities but also for their rendering of human creativity made perceivable and experienceable. Products provide a tangible means for us to engage with the world on this abstract level, and the motivators underpinning the drive to consume are powerfully influenced by psychological factors such as these. Since the first person dissected one smooth stone into two sharp-edged cutting tools, we have been mesmerized by objects that signify characteristics of human brilliance, affording elevated social status to individuals in possession of such artefacts.

### The myth of individuality

During the latter stages of the nineteenth century, Swiss linguist Ferdinand de Saussure worked through the concept of the sign, developed from Plato's idea – from *Cratylus* – of the signifier and the signified. He argued that relationships between the signifier and the signified are arbitrary and that signs are only meaningful in relation to one another – for example, light and dark, hot and cold, or mutton and lamb. As defined most simply in the *Toa Te Ching*, 'from dark emerges light, which in its own nature gives birth to darkness once more'.<sup>39</sup>

In 1982, French philosopher Jacques Derrida, in his analysis of *diffrance*, emphasized this point once more in propounding the theory that meaning cannot be found within the signifier itself, but that it can only exist in a matrix and, therefore, in relation to other things. Signifiers form meaningful networks to which we have very little conscious access, but which affect our lives completely; they organize our world as we unconsciously organize and manipulate them. With the idea of singularity and separation in question, Derrida further claims that there can be no absolute identity: there is 'nothing that is itself by virtue of its being'.<sup>40</sup> Nothing stands outside the system of differences, and we must be codependent with the other in order to experience the self. There can, therefore, be no such reality as an individual separate from society, just as there cannot be a societal mass without the presence of individuals. Society provides a mirror through which each individual person may assess his or her own hierarchical position; such comparisons within one's immediate societal group are a fundamental survival tool.

*Absolute individuality is a myth  
we all pursue.*

## THE PROGRESS ILLUSION

Today, material possessions are increasingly deployed as signifiers of status, casting us within socially desirable roles and stimulating an edgy culture of habitual comparing that is also prevalent in many other herding species. For example, a gazelle's survival is based almost exclusively upon relative stealth within the herd. Predators inexhaustibly pursue the group in search of stragglers, and so the key to success on the gazelle highway is not about being the fastest but avoiding being the slowest. Capitalist societies aspire to a different brand of success that is measured predominantly by monetary wealth, and although the props differ radically from that of the societal gazelle, individual pressure to keep up with the group is equally acute.

*Material possessions cast us within socially desirable roles.*

## Jamming creativity

Aesthetic fallout from technocentric design includes the stagnation of product typologies. Although an object's functional array may be incrementally tweaked with finite technological developments, the nature and complexity of the relationships that most products hold with users remain unchanged. In their 30-year existence, desktop personal computers (PCs) have evolved little despite significant developments in their productive capabilities. Even after the developed-world market's quantum shift from office to home use during the late 1990s, computers continue to portray the appearance of oversized calculators. This wrongfully presupposes that all consumer-side issues have already been adequately defined and that the needs of the computer user are the same today as they were back in 1970.

In 1998, Apple utilized this barren aesthetic as a backdrop for their first litter of multicoloured 'must-haves'. The final five fruit-inspired colours boosted sales by 24 per cent and drove Apple to its first profitable quarter in two years. Market share was won, and the societal gains afforded by the iMac – and subsequent coloured iBook – came as a timely reappraisal of our relationship with digital technology, challenging convention by introducing alternative and fresh futures.

Stagnant portrayals of reality, such as the desktop PC, deliver to consumers a stream of serial disappointments by failing to maintain currency with the ever-evolving values and needs of the user, streaming material life into one socially approved yet flagrantly outdated version. Interestingly, it often takes the introduction of a radical concept – or simply the introduction of an unfamiliar way to undertake familiar tasks – for users to actually stand back and recognize the sheer banality

of the objects with which they have been mindlessly interacting up to that point, like listening to some really dire music, you often are not aware of how terrible it is until it stops. This is why it is so crucial that users are presented with a variety of objects, each approaching a similar task in a different and wholly unique way – some rational and task focused, others bizarre and richly experiential, and so on. Needless to say, the current model of industrial design does not follow this route; largely due to the pressures of commercialism, the industry collectively gangs together and hits users with a somewhat monotonous stream of very similar objects indeed.

Although most design concepts exit the cranium as fairly eccentric manifestations, like rocks on a riverbed they are inadvertently streamlined over time until more commercially comprehensive scenarios are realized. Pared down to their simplest form, object types from toasters to televisions are recognizable at a glance due to a handful of prominent visual signatures, providing clues that clearly inform consumers of an object's assigned role and purpose. Through aesthetic discourse between creative designers and researchers, consumers and marketing specialists, consensus is reached regarding the way things should look – a mug is a ceramic cylinder with one semicircular handle, and laptops are like plastic books with keys and a screen. In a world of constantly evolving social values, static design languages such as these are obscure, to say the least. Problems increasingly occur when contemporary design scenarios cannot be easily pigeonholed into any one predefined type, jamming both creative freedom and real opportunities for change.

*Object types are easily recognizable due to a handful of key visual signatures.*

### How to guarantee disappointment

Rigid product typologies set the aesthetic parameters within which conventional design may freely function; any ventures beyond these guidelines plunge us into fuzzy, uncomfortable territory where genres blur and meanings cross-pollinate. In some instances, universally understood design languages are necessary, particularly in the case of safety equipment or highway signage where information must be instantly cognized without error. However, in its current state, industrial design prefers to safely dwell within the security of these parameters, channelling its innovative

*Experience-starved users hanker for meaningful content, mystery and emotion.*

## THE PROGRESS ILLUSION

energy solely toward the incorporation of new technologies into predefined product types. 'Interacting with this technocratic and de-personalized environment fuels a reactionary mind set that hankers after meaningful content, mystery and emotion.'<sup>41</sup>

Both the range and intensity of emotional experiences delivered by technocentric products are incredibly limited and offer very little to the consumer. 'Yet, even though industrial design plays a part in the design of extreme pain (e.g. weapons) and pleasure (e.g. sex aids), the range of emotions offered through most electronic products is pathetically narrow.'<sup>42</sup> Industrial design has become a subordinate packager of contemporary technologies, housing intangible hardware within intelligible synthetic membranes whose purpose is to enable consumers to easily interact without altercation or thought.

Cosmetic approaches to design engender wasteful cycles of desire and frustration within consumers by delivering only short-lived glimpses of progress. Placing technological currency as the sole product value indicator ensures loss of meaning the moment a newer model hits the shelves.

In a marketplace of relentless product obsolescence, the notion of consumer satisfaction will continue to remain a tantalizing utopia until product values diversify to incorporate factors beyond technical modernity – enabling consumers to transcend the temporal urgency of technocentric design and engage with their possessions over greater periods of time and on a diversity of emotional and experiential levels.

The volume of waste produced by this cyclic pattern of short-term desire and disappointment is a major problem, not just in terms of space and where to put it but, perhaps more notably, for its toxic corruption of the biosphere. The majority of today's post-consumer waste is currently disposed of via landfill sites, which leak heavy metals and other toxic contaminants over time, such as arsenic, cadmium, copper, lead, manganese and zinc. These toxic elements find their way into soil and groundwater, threatening local biodiversity. Landfills are also known to produce large volumes of methane, a principle

*Designers must be more than mere packagers of emerging technology.*

*Users could engage more fully with their possessions, over greater periods of time.*

*Technocentric design will fade as consumers tire of chasing unattainable utopias.*

greenhouse gas contributing to global warming. A smaller percentage of waste is burned using vast incinerators that produce ash laden with toxic elements such as cadmium, lead, mercury, chromium, tin and zinc, while also releasing acidic gases such as sulphur dioxide and nitrous oxides into the atmosphere. Even the much-acclaimed recycling of waste consumes large quantities of energy, while the chemicals involved during treatment and sorting often find their way back into the ecosystem, causing further damage.

### **Chasing unattainable destinies**

As human population continues to multiply and the quantities of natural resources available per person plummet, a dramatic reappraisal of our wasteful consumption and production is urgently required. Technocentric design is certainly here to stay and will always be one of a number of creative genres to circulate the made world; yet its popularity will surely fade as consumers tire of chasing unattainable destinies. This will give way to new specialist genres of design that deliver a broader and more meaningful array of user experiences. New product genres will emerge, offering alternatives to the wasteful mode of technocentric design and consumption, expanding our experience of daily life, rather than stifling it through endless cycles of desire and disappointment.

*New genres of design will construct meaning in layers, over time.*

### **Emotionally durable design**

Emotionally durable design explores the idea of creating a deeper, more sustainable bond between people and their material things. The ultimate aim is to reduce the consumption and waste of resources by increasing the durability of relationships between consumers and products. It tackles the challenge of weaning people off their desire for the new, and it helps to shape new sustainable business models: 'Longer lasting products have the potential to present robust economic models for creating products, services and brand-loyal customers – driving future sales, upgrade, service and repair.'<sup>43</sup>

*Emotionally durable design presents counterpoints to our 'throwaway society'.*

Take, for example, a toaster that lasts about 12 months. If you can extend that use-career to 18 months through emotionally durable design, you have brought

about a 50 per cent reduction in waste consumption in all the materials, energy and systems associated with the production and distribution of that product – this is a significant impact.

Far beyond the ephemeral world of technocentric design lurks a rich and interactive domain founded on a profound human need: the need for empathy. It is a sustainable realm where natural resources

need not be ravaged to satisfy every fleeting human whim and the very notion of waste is obsolete. In this alternative future, users and products flourish within long-lasting empathic partnerships, blissfully oblivious to the relentless taunts of the capitalist machine. Radical new commercial environments are pioneered in which objects provide conversation pieces that link consumers with manufacturers, facilitating upgrade, servicing and repair.

*Cut waste by increasing the durability of relationships between people and things.*

### Meaningful stuff

You peer through last season's IKEA blinds to see the neighbour's parking space, where a sulking Dyson now garnishes a skip filled with construction rubble, dotted with the broken fragments of a once-craved avocado suite. Next to it is a sun-yellowed CRT monitor showing UV decay, like a scorched tourist nearing the journey's end.

*A sulking Dyson now garnishes a skip filled with construction rubble.*

Never before have we owned so much, wanted so much and wasted so much. In a world smothered in people, products and buildings, it must be questioned what – beyond a conventional understanding of functionality – is all this 'meaningful stuff' really for; why does it transform into 'meaningless rubbish' so quickly; and what is it that we actually seek through this world-breaking process?

*What is it we seek through this world-breaking process?*

For decades, designers have strived to put the ghost into the machine – to be meaning-makers – yet it is within us that the spirit lurks. This book examines the meaningful proxies, triggers and metaphors embedded within material experiences – of things as far-ranging as toothpicks and televisions to brogues, bathroom suites and construction materials – to expose alternative understandings of the

immaterial culture underpinning our stuff and the manifold dialogues we are continually engaged in with the plethora of designed objects and environments that touch our lives.

In addition to examining the showroom-like display of stuff that we position carefully around our home – and, of course, the home itself – we venture inside the secretive realm of top drawers, wardrobes and dust-coated shoeboxes under the bed to reveal obscure material worlds of profound personal meaning.

The last century witnessed a steady societal migration away from deep communal values toward a fast-food culture of nomadic individualism and excessive materialism. During recent years, there has been a move away from interpersonal relationships toward a newer and faster mode of relations; a significant shift occurred from inter-human relationships toward a contemporary mode of individuality fragmented over countless relationships with designed experiences.

This epoch-making societal transition has cast us within an abstract version of reality in which empathy and meaning are sought from toasters, mobile phones and other fabricated experiences. Today, empathy is consumed not so much from one other, but through fleeting embraces with manufactured objects:

*Hidden treasures fill dust-coated shoeboxes under the bed.*

*The past century has seen a societal migration toward excessive materialism.*

*Empathy is often sought through fleeting embraces with manufactured objects.*

The shift, away from immateriality and anonymous experience towards reflexive encounters, is seemingly only the crest of a larger cultural wave, which is rapidly imparting greater understanding into the way we perceive, condition and create the world in which we live.<sup>44</sup>

This has fostered a mind shift within the development of both object- and human-centred relationships, driving a steady societal shift away from deep communal mutuality toward a fast culture of individualism and superfluous materialism. As experience-hungry users, we are constantly updating these relationships with newer, and ever more diverse, things.

## THE PROGRESS ILLUSION

This behavioural pattern begins to explain the current exudation of waste. Furthermore, in a world of unceasing technological miniaturization, demands will emerge for objects with potent sensory and emotional resonance. We are already beginning to see early signs of a rising consumer desire for products embodying traits of consciousness, eccentricity and an increased responsiveness to emotional input. Autonomous characteristics such as these will be increasingly required to compensate for the lack of physical presence resulting from product miniaturization.

Each of us shares, to varying degrees, the need for a material world: a world of tangible things to enhance the experiential quality of daily life, such as a faster car, a larger TV or a softer sofa. However, along with enhancements to the experiential fabric of daily life, these physical objects serve a deeper and altogether more profound purpose that is frequently overlooked. Consumable objects and experiences provide a means for us to engage with the world on both rational and emotional levels.

*Each of us shares, to varying degrees, the need for a material world.*

In the instance of a new laptop, for example, what we see and what we experience are two remarkably different things. In one sense, we see a slick plastic chassis and assume that inside is a battery, a disk drive of some sort and extensive complex circuitry that we will most likely never actually see but can confidently assume is in there somewhere. What we experience, on the other hand, might include intense sensations of freedom, independence, control, individuality, efficiency, precision, organization and status.

## Waste is symptomatic of failed relationships

Developed-world consumer desires relentlessly grow and flex, while material possessions remain hopelessly frozen in time. This incapacity for mutual evolution renders most products incapable of sustaining a durable relationship with users. The mountain of waste this single inconsistency generates is apocalyptic, coming at increasing cost to legislation-swamped manufacturers and the natural world.

*Desires evolve but objects generally do not – we outgrow things.*

Landfills around the globe swell with fully functional appliances – freezers that still freeze and toasters that still toast – their only crime being a failure to sustain

empathy with their users. Research has shown that, during recent years, '25 per cent of vacuum cleaners, 60 per cent of stereos and even 90 per cent of computers still function when people get rid of them'.<sup>45</sup>

For centuries, the art world has been implicitly aware of the need for mutual evolution between the consumer and the consumed. Artistic expressions from traditional oil paintings to *avant-garde* installations are conceived as contemplative works, rarely surrendering all their meaning at a single glance. This is enabled by the presence not simply of meaning, but of layers of meaning that continually tantalize the onlooker to provide a lifetime of incremental revelations.

In 1912, German psychologist Theodor Lipps described how the appreciation of a work of art depended upon the capacity of the spectator to project his personality into the object of contemplation. Lipps claimed that 'one had to feel oneself into it'.<sup>46</sup> He named this cybernetic process *Einfühlung*, which translates as

'empathy'. In their current guise, consumer products lack the sophistication and layered complexity for this degree of empathy to occur. Most consumer products relinquish their meaning at a single fleeting glance, while rarely delivering any of the life-altering rewards they so confidently promise from the shop floor. In this respect, waste is nothing more than symptomatic of a failed user-object relationship, where insufficient empathy led to the perfunctory dumping of one by the other.

In terms of sustainability, it is rational to assume that extending product lifetimes will have a wholly positive outcome. Indeed, most consumer products (such as walking sticks, chairs, radios, cameras, laptops and smartphones) require large amounts of energy and resources to produce, yet consume relatively little during use, making them highly suited for product life extension. However, products that consume large amounts of energy to operate (such as refrigerators and washing machines) warrant a closer look.

*Landfills around the globe swell with products that still work.*

*Artworks are layered and rarely surrender meaning at a single glance.*

*Waste is a symptom of a failed relationship.*

*Loss of empathy leads to the perfunctory dumping of the object by the user.*

## THE PROGRESS ILLUSION

Take the humble refrigerator, for example; being the largest direct consumer of electricity in the household, refrigerators receive a large share of annual research and development budgets. Consequently, incremental improvements in energy efficiency are in abundance. It therefore follows that to run an energy-hungry yet cherished 1950s classic may not be the smart move in terms of energy consumption, and it would be worthy of speculation whether the energy consumed by such a product in a two- to three-year period might actually be more than that required to process the materials and manufacture an entirely new and more efficient one. Despite this analysis, research into the elongation of product life must still surge forth. For example, perhaps the inefficient motor in the 1950s fridge simply needs replacing with a newer and more efficient one which, like a heart transplant, might afford the old fridge a new lease of life?

*In terms of energy consumption, update that vintage refrigerator from the 1950s.*

## Anthropocentrism

Since the closing stages of the last century, the word 'sustainability' has found its way into the public lexicon. Despite the widespread acceptance of this term, it must be questioned as to whether we actually understand it, what it signifies and what it proposes we actually do. At its worst, sustainability could be described as an anthropocentric premise:

*At its worst, 'sustainability' is an anthropocentric premise to serve human survival.*

people like to preserve these things not because they perform some important function in their own right, but, rather, because they wish to ensure that people will be serviced in the future in exactly the same way they are currently.<sup>47</sup>

Earth is finite, balanced, synergistic and reactive, and yet we design the world as though it were separable, mechanical and lasting. This dualism between ecological and mechanistic worldviews is born from a fundamental crisis of behaviour, which itself is shaped by the deeper motivational origins of the human condition – encompassing the experience of being human and the ongoing search for ultimate meaning in social, cultural, and personal contexts – and leads to a fundamental 'epistemological error'<sup>48</sup> that shapes practically all that we do, and that can be found at the very

root of unsustainability. Gregory Bateson's work, located at the nexus of psychology, cybernetics, philosophy, anthropology and the natural sciences, transformed early ecological thought. His theory of epistemological error posits that the Western position is that of a radical disconnection from nature, meaning that our entire epistemological premises are in error.

Anthropocentric thinking is commonplace in the growing knowledge field of environmental sustainability, and it frequently serves to place our species at the forefront of all significant disasters on Earth. We see ourselves as being so powerful and magnificent that our abilities have outgrown this fragile planet's ability to support us. This self-elevating arrogance is surprisingly evident within a large proportion of ecological thinking, and we must move beyond this counterproductive rendering of self if we are to benefit the wider environmental cause. The way in which we perceive our own supremacy as a species can be further demonstrated via the common assumption that if aliens came to this planet, they would, of course, want to make contact with and study humans. Would they really? They may actually be far more interested in sand, turnips or grasshopper wings.

Take climate change, for example. It is beyond dispute that it is a real and potentially deadly threat that will cause immeasurable problems in the future. Many contest the view that climate change is man-made, claiming instead that Earth's climate has always been unstable and that sea levels have been rising and falling since the very dawn of time. It could be said that, like everything else on this unstable planet, transience is one of our climate's key characteristics, and it is important that we remain mindful of this. After all, the Ice Age was surely not triggered by our lack of polluting at that time or, perhaps, insufficient burning of fossil fuels. A continually fluctuating global climate is a natural condition of the planet, and although we obviously contribute in a major way to global warming, the enormity of climate change suggests that greater forces are at work and that it may not be entirely down to us.

Many well-respected practitioners within the sustainability arena believe that 'the definition of sustainability is neither vague nor abstract; it is very specific and is

*If aliens landed, they may be more interested in sand, or turnips, than us.*

*Man-made climate change is real, but sea levels have fluctuated since day one.*

## THE PROGRESS ILLUSION

tied to measurable criteria describing how resources are used and distributed'.<sup>49</sup> In addition to this, many ardent supporters of sustainability will refuse to even consider the possibility of objection, believing that a unanimous consensus must be reached in which everyone agrees with the moral principles laid down by the ethical ideologies of sustainability:

Sustainable planning policy in Europe rests on an extreme degree of consensus, that sustainability is right. There is no ethical basis for this. An extreme consensus can in itself be unethical. In its most abstract form, sustainability has no inherent value. The standard argument for recent sustainability policy – transgenerational responsibility – has no inherent ethical status either. In practice, sustainable planning continues standard practice, and this offers the best explanation for its success. Sustainability is an ideology used to justify existing policy (and social order).<sup>50</sup>

Despite the positive motives underlying most people's engagement with sustainability, it must be noted that the very term 'sustainable' can actually be quite unhelpful. It defines the concept in such broad terms that it may be applied to almost any endeavour that loosely shares its vague ideologies; what are we sustaining, and for how long should we sustain it? The term has become so overused that most of its desired impact has been lost, and, like most popular slogans, it is beginning to wear rather thin:

*The word 'sustainability' is so overused that most of its desired impact has been lost.*

The word sustainable has been slapped onto everything from sustainable forestry to sustainable agriculture, sustainable economic growth, sustainable development, sustainable communities and sustainable energy production. The widespread use of the term indicates that many people conclude that the dominant industrial models of production are unsustainable.<sup>51</sup>

Despite this, many still argue in favour of the term, stating that 'we don't need a theory of sustainability. We already know what it is and even if we don't know, it is a motivating slogan for social change.'<sup>52</sup> Participating in the sustainability debate

*Many buy organic as it gives a sense of well-being; it makes you feel good.*

through such means as buying local, consuming alternative energy or, perhaps, being proactive in a neighbourhood recycling initiative provides many with an enormous sense of well-being. And there is nothing wrong with that. The same may be said of other ethically aware practices, such as buying organic. Research from the UK supermarket Sainsbury's revealed that a large number of their customers chose organic produce because it gave them a sense of well-being, rather than any particular concern for the environment or, perhaps, their health.<sup>53</sup> Although those of us who ride our bikes to the bottle banks while nibbling on an organic carrot might deny that we get a huge kick out of doing our bit for the environment, it is essentially of little consequence. The important thing is that we are engaging in acts of positive social and ecological change, whatever our motives might be. At the product design level, this principle endures.

### About-face

Einstein once stated that a problem could not be solved from within the mind-set that created it. Indeed, fresh thinking is imperative if we are to successfully transcend current working methods and stride forth into unprecedented commercial territories. *Emotionally Durable Design* reframes the environmental paradigm, increasing resource productivity and reducing waste by elongating the lifespan of products.

*Problems cannot be solved with the same thinking that created them.*

This book proposes a radical design about-face in order to reduce the impact of modern consumption without compromising commercial or creative edge – empowering alternative modes of consumption through provocative genres of objects that expand our experience of daily life rather than closing it down through endless cycles of desire and disappointment. This book does not propose a sweeping overhaul of the entire designed world. Instead, it espouses the emergence of a specialist design genre that caters for deeper, more profound and poetic human needs, taking users beyond the ephemeral world of technocentric design toward a rich, interactive domain of emotionally durable objects and experiences. 'It is time for a new generation of products that can age slowly and in a dignified way ... [to] become our partners in life and support our memories.'<sup>54</sup>

*Emotionally Durable Design* reduces the consumption and waste of natural resources by increasing the resilience of relationships established between people

## THE PROGRESS ILLUSION

and products. It is an exploration into product lifetimes; belonging to the growing knowledge field of sustainable design, this book essentially embarks upon an investigation into why users dispose of products that still work, while providing designers from a range of creative disciplines with inspiring propositions, provocations and strategies to extend product life, interlaced with insightful critiques of the motivational drivers that underpin the human consumption and waste of goods.

# chapter

## two

### consumer motivation

*Consumption is about far more than simply the mindless purchasing of newer, shinier stuff – it is a journey toward an improved and evolved self.*

#### **Consumption is natural**

Ask a developed-world human to stop consuming and you might as well ask a vampire not to suck blood. Although the urge can be temporarily suppressed to varying degrees of success, overcompensatory surges inevitably follow, providing an aftermath of even greater intensity; consumption is not just a way of life, it is life.

Consumption provides an invaluable vehicle for processing and interacting with an evolving world, facilitating both learning and social interaction through the continual intake of new, fresh experiences. As natural as drawing breath, the urge to consume is merely symptomatic of a stimulus-hungry species dwelling in a homogenized and over streamlined world where the prevailing mode of existence comes with the majority of problems already solved.

*Asking a human to stop consuming is like asking a vampire not to suck blood.*

*Consumption is natural.*

## CONSUMER MOTIVATION

Indeed, as our tools have improved, we suddenly find ourselves with large amounts of spare time that need filling; complex and often highly specialized tasks that once may have taken hours to accomplish can now be completed by all in a matter of seconds. Crippled by its own brilliance, the understimulated human brain must now search elsewhere for stimulation of a more synthetic, designed nature. The modern consumer is born and shall, henceforth, mine the glossy veneers of material culture in the hopeless pursuit of qualitative stimulation.

*Consumers mine the glossy veneers of material culture in search of meaning.*

### **The material you possess is the destiny you chase**

Like an itch that can never be scratched, the covetous search for the ultimate expression of self as mediated through manufactured objects appears to be endless:

The people I know who used to sit in the bathroom with pornography, now they sit in the bathroom with their IKEA furniture catalogue. . . You buy furniture. You tell yourself, this is the last sofa I will ever need in my life. Buy the sofa, then for a couple years you're satisfied that no matter what goes wrong, at least you've got your sofa issue handled. Then the right set of dishes. Then the perfect bed. The drapes. The rug.<sup>1</sup>

This process of continual self-improvement is relentless and, as most of us have experienced first hand, seldom arrives at the utopian destination that it so desperately strives to reach.

Material consumption is driven by complex motivations and is about far more than just the acquisition of newer, shinier things. It is an endless personal journey towards the ideal or desired self that, by its very nature, becomes a process of incremental destruction; this take-up and subsequent displacement of matter enables the consumer to perceive their individual evolution and development as it occurs ontologically:

Modern consumption conveys an approach of selecting unique products that meet specific values and lifestyles, and is manifested in the desire to buy products that satisfy perceived lifestyle preferences . . . it represents a consumption pattern that is designed to pursue a unique way of life and which differs from that of other people.<sup>2</sup>

Designed objects and experiences provide a means for us to engage with the world on an existential level, and the potency of objects in symbolically designating our particular being is significant.

Despite the environmentally conscious whitewash of negativity that comes hand in hand with the process of consumption, it must not simply be cast off as a fruitless sequence of material destruction; far greater things are taking place, which, if examined, may provide further insight into the gross inefficiencies of contemporary material culture.

The process of consumption occurs constantly – even now through the intake of the meanings that these words signify – and so we are continually engaged within this process. While doctors may claim we are consumers of oxygen, water and sunlight from the moment of conception, a philosopher might speak of existence as the opportunity to consume knowledge and experience. The majority view, however, is still grossly misguided in assuming that consumption only occurs when credit cards are taken out. It has become commonplace – throughout all media, from ecological journals and corporate websites to popular television and the tabloid press – to be cautioned on the rampant consumption of goods and the overconsumption of natural resources. Today, the word ‘consumption’ comes overloaded with negativity, which renders it a blurred and deeply distorted phenomenon, frequently obstructing the lucid comprehension of what is actually an essential facet of the human condition.

### **The dark side**

Through our drive toward a faster, lighter, brighter and more technologically advanced world, humans have wreaked havoc throughout all natural systems that support life on Earth. Over the past 150

years, we have mined, logged, trawled, drilled, scorched, levelled and poisoned the Earth, toward the point of total collapse.

Similar to forms of parasitism, in which one

species benefits at the expense of another, the non-mutual nature of our relationship with the Earth has grave consequences for the biosphere, and us.

*Over the past 150 years, humans have wreaked havoc throughout the natural world.*

Our actions have shaped the world in many important ways, for worse and for better. We have created technological options to prevent, eliminate or lessen threats to life and fulfil social needs. Yet it is important to see beyond the horror of

## CONSUMER MOTIVATION

destructive man-made acts such as these to understand their behavioural genesis. The 'made world' is a consequence – an emergent space in which the human species has progressively found ways to modify and enhance the world around us. The urban spaces we roam, buildings we inhabit, products we use and garments we wear collectively represent our intellectual capacity to imagine a better world that is beyond our current level of experience. This innate capability to imagine a world just beyond our current level of experience and then formulate (design) plans to realize those imaginings is an essential determinant of what it is to be human – to 'reach beyond innate human limitations', as John Heskett puts it.<sup>3</sup>

For example, early nomadic hunters and gatherers initially used the animals and plants they found in the environment as food, and

[g]radually, they learned how to expand their food supplies by using processing technology (such as pounding, salting, cooking and fermenting). After many thousands of years of hunting and gathering, the human species developed ways of manipulating plants and animals to provide better food supplies and thereby support larger populations. People planted crops in one place and encouraged growth by cultivating, weeding, irrigating and fertilizing. Communities captured and tamed animals for food and materials and also trained them for such tasks as ploughing and carrying loads [now replaced by large machines powered by fossil fuels, and controlled by just one person]; later, they raised such animals in captivity.<sup>4</sup>

There is nothing new about this process of refinement. Throughout human history, evidence of this enduring human characteristic can be found, whether it be the selective rearing of high-yield livestock or the genetic modification of a given strain of fungus-resistant barley. Through millennia of striving to enhance the conditions for life, we have evolved our processes and practices beyond recognition.

Consumption is spoken of with a practically universal disdain, and not without just cause. Within the last 50 years alone, the world has lost over a quarter of its ancient rainforests, posing a large threat not only to biodiversity but also to the planet's air quality. In addition, both carbon dioxide ( $\text{CO}_2$ ) emissions and the consumption of fossil fuels themselves have increased almost 400 per cent within

*Our ability to imagine a world beyond current levels of experience propels us forth.*

the same period, catalyzing further irreversible devastation to the biosphere. 'US consumers and industry dispose of enough aluminium to rebuild the commercial air fleet every three months [and] enough iron and steel to continuously supply all automakers.'<sup>5</sup> According to the Intergovernmental Panel on Climate Change (IPCC), global climate is already showing signs of mutation, with current projections indicating an average global temperature increase of around 0.2°C per decade.<sup>6</sup>

In *Silent Spring*, Rachel Carson alerted us to the fact that '[f]or the first time in the history of the world, every human being is now subjected to contact with dangerous chemicals, from the moment of conception until death'.<sup>7</sup> Since this was first published, over 50 years ago, our situation has significantly worsened. Add to this the mounting problems of waste, acidification of soil and groundwater, deforestation, air pollution, diminishing natural resources, ozone depletion and climate change, and the picture does start to appear somewhat bleak, no matter what your ethical position may be.

### **Statistics impose a paralysing vastness**

'It is certainly a shallow philosophy that would make human welfare synonymous with the indiscriminate production and consumption of material goods.'<sup>8</sup> However, launching into a diatribe of doom-and-gloom statistics merely labours the already comprehensive point: production and consumption in their current guises are both inequitable and without future.

*Production and consumption in their current guises have no future.*

A well-intentioned snowstorm of environmental data may attempt to argue the case for immediate action; yet in reality, we – as a consumer society – are already aware that our lavish existence is ravaging the Earth. If anything, environmental statistics of this nature actually hinder progress as they underline the paralysing enormity of the ecological crisis, intimidating us as individuals; denial kicks in, and the reachable become unreachable. As the Native American peoples say, you cannot wake a person who is pretending to sleep.

*You cannot wake somebody who is pretending to sleep.*

Such apocalyptic data are counterproductive in most scenarios, and they are often the precursor to the murmuring of 'What difference can I possibly make?' The streams of environmental doom and gloom that have been emerging over the past

few decades contribute enormously to the current problem, where most consumers feel disengaged, lacking in motivation and emotionally numbed by the sheer vastness of our looming ecological crisis.

Passive consumer attitudes to the ecological crisis we face are enforced further by the misguided notion that comfort must be sacrificed in order to make positive change.

It is commonly felt that 'the changes in living that would be required are so drastic that people prefer the future catastrophe to the sacrifice they would have to make now'.<sup>9</sup> Warped notions of ascetic lifestyles abounding with non-enjoyment invade the consumer psyche, rendering the prospect of a greener existence an undesirable alternative. Thus, the inefficient consumer machine continues to thrust wastefully forth. The feel-good factor after taking measures such as recycling bears a grave similarity to 'someone who quits smoking on his deathbed',<sup>10</sup> and in some instances, possesses an equally negligible efficacy.

These forms of ecological procrastination can be likened to the common experience of delaying a visit to the dentist.

Although we may be perfectly aware that each day brings further discomfort, the decaying tooth goes unattended, ensuring that the inevitable operation will be far more dreadful when it does eventually arrive.

*Doom-and-gloom rhetoric slows progress by scaring people into denial.*

*Ecological procrastination is like delaying a much-needed visit to the dentist.*

### Conceptualizing the act

The devastating environmental impacts of material consumption – such as diminishing natural resources, air and water pollution, waste and global warming – could be seen as legacies of modern times, catalyzed by the enhanced production capabilities of the twentieth century. A growing awareness of this has led the more enlightened industrialists to initiate exploration into the possibilities of what they refer to as 'sustainable consumption'. At first glance, the term 'sustainable consumption' may appear profoundly oxymoronic; the coupling of two seemingly opposed words will do that. However, the concept of sustainable consumption is quite possible, although it appears that the meaning of the word 'consumption' needs clarifying before any real progress can be made here.

Although the verb 'consume' can be traced back to the fourteenth century, 'consumer' emerged much later, in 1745, followed later still by 'consumerism' in

1944. The verb 'consume' derives from the Latin word *consumere*, meaning to use up, eat or waste. An etymological deconstruction thus follows:

*Consume* – c.1380, from Latin *consumere* 'to use up, eat, waste,' from *com-* intensive prefix ... + *sumere* 'to take,' from *sub-* 'under' + *emere* 'to buy, take'.

*Consumer* ... [i]n economic sense ... (opposite of producer) first recorded 1745.

*Consumerism* is from 1944 in the sense of 'protection of the consumer's interest'; modern sense of 'encouraging consumption as an economic policy' is from 1960.<sup>11</sup>

In the instance of consuming food, it is easy to understand the exchange of both physical and metaphysical property between subject and object. Take a peach, for example: the peach signifies nourishment, vitamins, minerals and an afterglow of vitality to be experienced post-consumption, yet anticipated pre-consumption. To the hungry, it represents the potential satisfaction of needs and desires.

In the manufactured world, the anticipatory exchange of meanings and rewards is similar to that of the peach. The image of an iPad in *T3 Magazine* will speak to the potential consumer of its own intelligence, speed, wit, style and overall ability to project the future user into a contemporary and nomadic world. These perceivable meanings must not be underestimated as they are potent to the onlooker. The desire-driven act of consuming the iPad becomes a simple process of embodiment through association and knowledge. Like the peach, nourishment resulting from this type of consumption has a limited lifespan and exists at the level of experience.

In the case of manufactured products, the term 'consume' can be misleading. Waste facilities are stuffed full of dishwashers, televisions, hairdryers, computers, mobile phones, answer machines, bicycles,

food processors and much more, most of which have spent a year or so of conscience-time in drawers, attics and garages prior to disposal.

garages prior to being dumped. Many of

these products – in a utilitarian sense – still function perfectly and most definitely have not been consumed or used up at all. So what have these apparently

## CONSUMER MOTIVATION



**Figure 2.1**

### Scrapped tech

*Just like a ripped pair of jeans or a scuffed antique table, some people like the look of well-worn objects – but do the same values apply in the tech genre?*

Source: Remy Labesque for Frog, 2013

*Photographs by Remy Labesque*

indispensable life-changing products ceased to do in order to be granted a 500-year death sentence of slow biodegradation?

### **When aren't we consuming?**

The motivational drivers underpinning the act of consumption represent a way of being, of interacting with the world. Consumption is far from straightforward and, if anything, the question should be when aren't we consuming? Whether the stimulus is speed, brands, individuality or anything else for that matter, we are endlessly internalizing external stimuli and will always be engaged within this complex process. We are consumers of meaning and not matter; it could be argued that material objects simply provide a tangible means through which these connotations may be signified to the user.

We transfer resources into products that provide us with existential mirrors, allowing us to view and experience our dreams and desires in real time. These reflections help us to construct an identity that we feel is individual while also being indicative of our individual aspirations and dreams. In this respect, objects are meaningful in that they illustrate – both to society and the self – our personal life journeys. The process of consumption also appears to possess a quality of avoidance; by continually busying ourselves within a world of goods and services, we cunningly sidestep sensations of emptiness through sheer distraction – consumption gives us a sense of purpose and belonging.

Material consumption operates on a variety of experiential layers, from the rational and the tangible to the profound and the numinous. Consumers mine these layers, unearthing meaningful content as they steadily excavate deeper into the semiotic core of an object. If any one of these layers should fail to stimulate, the relationship between user and object immediately falls under threat. In marketing circles, this is referred to as extinction or, more descriptively, as the disappearance of a response due to lack of reinforcement.

This is a hazardous stage in the subject-object relationship; hitting rock bottom is frequently the precursor to product replacement. At present, most objects are designed without this understanding, leading to a wasteful culture built on the fragile

*We are consumers of meaning and not matter.*

*The process of material consumption is far from rational.*



**Figure 2.2**

**1780s George III commode**

*Contained within the contemporary rectilinear oak chest of drawers is the ghost of its past, as though through the erosion of time, a fossil is revealed.*

Source: Gareth Neal, 2009

Photographs by Gareth Neal

foundation of anonymous interactions with fairly meaningless objects. In contrast, it may be said that consumers will continue to mine the experiential layers of an object just as long as there are further layers to be mined. It is, therefore, imperative that designers endeavour to weave greater degrees of intricacy among the layers of products to ensure the sustainability of their meaning.

## Need

Gandhi once said that 'Earth provides enough to satisfy every man's need, but not every man's greed'.<sup>12</sup> Yet human need is also insatiable and may quite possibly be situated beyond the reach of complete and total satisfaction. This is because new needs emerge the moment old needs are met, thus nurturing the infinite sequence of desire and destruction so characteristic of the modern world. This continual raising of the bar has brought our society to where it is today in terms of both social and technological evolution. In contrast, our eternal dissatisfaction has also nurtured a grossly transient consumer culture responsible for the crafting of ecological devastation on a global scale.

*New needs emerge the moment old needs are met.*

Although well intentioned, attempts to suppress the human need to consume are somewhat futile; swimming against the stream in this way is generally counterproductive. Deeper approaches that are similar in philosophy to the Japanese art of Aikido, which aims to both understand and embrace the ensuing problem, may be far more productive. In Aikido – meaning 'way of integrating the spirit' – an opponent's strength is first understood and then artfully manipulated to gain control over them. By understanding more about the very nature of human need, we can begin to manipulate and gain control over it. Only then can we set out to create design solutions to better meet today's intensifying levels of consumption.

Need could be described as the very core from which the majority of human motivations are born; continually at work, needs exist as potent psychological features that chastise us into action the moment a *lack* is experienced. Sociologist Robert Bocock defines the very ideology of consumerism as a vital sociocultural process, emerging primarily from a sense of lack: 'Consumption is founded on a *lack* – a desire always for something not there. Modern/post-modern consumers, therefore, will never be satisfied. The more they consume, the more they will desire to consume.'<sup>13</sup> Bocock claims that consumer motivation – or the awakening of human need – is catalyzed by a sense of imbalance or

*Needs chastise us into action the moment a lack is experienced.*

*Needs arise when an imbalance is experienced between actual and desired states.*

## CONSUMER MOTIVATION

lack that steadily cultivates a restless state of being. This restlessness is interpreted by consumers as discontentment, and it frequently motivates goal-oriented behaviours such as shopping, discarding or other modifications to the material fabric of one's life. Needs are therefore motivated when a real-time imbalance is experienced between an actual and a desired mode of existence.

Material artefacts are indicative of an individual's aspirations and serve to outline their desired life direction:

At the most superficial level, an object can be seen by the user to resonate with and be symbolic of the self. Thus, perceiving oneself as rich and powerful might lead to conspicuous consumption, such as owning a luxurious car or wearing designer apparel. At a more profound psychodynamic level, having and utilizing an object can compensate for an unconsciously felt inadequacy.<sup>14</sup>

The advertising industry has been capitalizing on this phenomenon for the last few decades, ensuring that we, as consumers, are exposed to a continual stream of slightly more desirable futures to guarantee that a sense of lack is never far away. 'Advertising has [us] chasing cars and clothes[...]... working jobs [we] hate so [we] can buy shit we don't really need.'<sup>15</sup> In so doing, consumerism is sustained through the antagonistic nurture of social dissatisfaction that has become so commonplace in modern times that it continues unattended and largely unnoticed.

New Zealand's Buy Nothing Day Organization reinforces the notion that a primary endeavour of advertising has been the nurturing of dissatisfaction within consumers; they 'believe that advertising abets over-consumption by causing people to feel unfulfilled with what they have, and playing with many personal insecurities, manipulating people into buying more'.<sup>16</sup>

### Object meaning

Since the dawn of official consumerism in the 1940s, numerous theories have been pioneered that attempt to generate coherent understanding of the immaterial factors that influence the uptake and subsequent

*Object meaning is a complex, slippery topic.*

disposal of manufactured objects. Many of these attend to the socio-psychological dimensions of the user psyche, such as personality differences, status and desire. Other theories explore more peripheral issues such as spending and saving habits, general product preferences and fashion cycles. 'As a consequence, only a few consumer researchers . . . have even discussed, much less studied, meaning'.<sup>17</sup> It therefore appears that in research terms, object meaning – and its endurance – is a relatively untouched issue, yet as Stuart Walker argues in his monograph *Sustainable By Design*, '[a] sustainable solution can be understood as one that possesses enduring value in terms of its meanings and characteristics';<sup>18</sup> as such, a gap in the knowledge field is immediately exposed.

The concept of meaning is perhaps the most complex of all. As a relational property, meaning is influenced by the consumer's previous experiences while also being highly context specific. For example, the meaning of a rat in a pet shop differs greatly to that of the same rat in a restaurant kitchen. In this respect, it is easy to envisage how product meaning can be

*The meaning of a rat in a pet shop differs greatly from a rat in a restaurant kitchen.*

loosely steered by designers but never fully directed. However, this idiosyncratic nature that meaning possesses could be the designer's greatest opportunity to create individual, perceptively one-off experiences; it is within the peculiarity, the randomness and the idiosyncrasies of human emotion that the real design potential lurks, as it may be argued that emotional responses make up the very foundations of individuality – they are what distinguish us from others. The example of the rat, although obscure, serves to demonstrate that meaning, expectation and memory are all interconnected components of psychological function that collectively serve to craft and form the specific character of any given human experience.

Research from Kleine and Kerman reveals that

[o]bject meaning incorporates three essential characteristics: Polysemy refers to the fact that a given object can mean many things – baking soda, for example, can be a refrigerator deodorizer, a dentifrice or an antacid. Contextual sensitivity suggests that the meaning of a turkey on a Thanksgiving Day dinner table probably differs from that of a turkey placed on a dinner table during mid May. And consensus refers to the fact that, even though each person holds idiosyncratic information about an object, some minimal

## CONSUMER MOTIVATION

amount of object information (meaning) must be shared by people in order for them to communicate about the object.<sup>19</sup>

This last point – consensus – relates directly to Richins' dualistic paradigm of 'public and private meanings',<sup>20</sup> indicating that some meanings are shared and others remain exclusive to each individual user due to their idiosyncratic and highly personal nature. As Louise Purbrick states,

[t]he meaning of objects can appear both fixed and changeable. These two oppositional characteristics are assigned to objects by anthropologists in some of the most influential writings on material culture, works that have shaped the way objects are viewed in art history, cultural studies, design history and sociology.<sup>21</sup>

To an observer, the things we own and cherish may appear superfluous, 'banausic, [and] even venal',<sup>22</sup> yet we cling to them because they possess personalized meaning that defines us individually, as separate from society. By allowing the accumulation of these narratives, deep sensations of attachment, empathy and meaning develop within the user. 'It is this empathy, and indeed intimacy, between the subject and the object which activates numinous experiences and expands consciousness'.<sup>23</sup> Due to the ambiguous nature of the engagement that takes place between people and things, narratives are exclusive to each individual user and frequently give rise to meaningful associations so strong that the object in question may be considered irreplaceable.

As consumers, we are driven by a constant search for meaning, as experienced through interactions with objects; Ramakers argues that '[t]he only difference between designer and user is that the designer has made a career of creating meaning[ful experiences]'.<sup>24</sup> It is this through this process of meaning conversion that designers enable the formation of powerful and lasting connections between users and their products. This theory is further supported by Walker who urges that

'[i]t is important to consider how things might be if more emphasis were given to that part of us that contemplates purpose and meaning. For the designer this poses important questions about the relevance and nature of products'.<sup>25</sup> Although partially situated within the social sciences, it is clear that design plays a key role in

*Objects make us, just as we make them.*

**Figure 2.3****Collective spirit**

*This boat has been built using over 1,200 donated wooden objects – from hockey sticks to part of Jimi Hendrix's guitar – culminating in a complex assemblage of object narratives.*

Source: Gregg Whelan and Gary Winters, 2012

*Photographs by Toby Adamson*

developing these emergent concepts, which clearly signposts opportunities for collaborative work that spans disciplines. In 'The social psychology of objects', Miller claims that this is an area where social scientists can inform designers, but also where designers with a thorough practical knowledge of what people do with objects, and what objects do to people, can be enormously helpful to social scientists.<sup>26</sup>

## CONSUMER MOTIVATION

The work of Dewey,<sup>27</sup> Carlson<sup>28</sup> and Csikszentmihalyi<sup>29</sup> indicates that if we understand the environment in which an experience occurs, and how objects function as emotional levers within that environment, we may be able to discover opportunities to design new products that have an effect on the [resulting] emotional experience.<sup>30</sup> *The Meaning of Things* (1981) features a study by Csikszentmihalyi and Rochberg-Halton, who interviewed 315 respondents about their possessions and concluded that people invest psychic energy in products as they provide meaningful expressions of themselves. Furthermore, this survey developed a categorization of design objects as 'action objects, or those objects whose use involves some physical handling, interaction or movement, contrasted to contemplative objects'.<sup>31</sup>

In a study by Jääskö, Mattelmäki, and Ylirisku, it was found that meaning is not always associated with the object itself, but sometimes with the service that the object provides: '[f]or example products that support self expression and social interaction, such as cellular phones, may become meaningful to the owner because of the

*Meaning can be associated with the service an object provides.*

saved messages or names and contact information of the loved ones.<sup>32</sup> The ability of a product to be customized by the user therefore may be said to elevate its status to something intimate, self-reflective and meaningful – transcending basic mass-produced functionality to become something more unique and self-reflective. In this way, Esslinger urges, '[n]o matter how elegant and functional a design is it will not win a place in our hearts unless it can appeal at a deeper level, to our emotions'.<sup>33</sup>

In this way, it can be seen that emotions are far more complex than they first appear; they are inexplicably intertwined, making their origins practically indistinguishable. Desmet reinforces this proposition, claiming that it is not possible to predict how personal associations are made or how users interpret the meanings signified by products: '[t]o be able to create a product that enables the desired emotional effects, the designer should [first consider] the concerns of the person, who will use the product'.<sup>34</sup> Although complex in conventional manufacturing scenarios, the research of a more humanistic approach for mass production must be both urged and enabled.

*It is impossible to fully predict how users interpret the meaning of products.*

Batterbee and Mattelmäki describe a survey in which 113 stories and essays are gathered from people in Finland about possessions with which they have developed

a meaningful relationship.<sup>35</sup> Their proposition is that '[m]eanings, experiences and meaningful relationships with products are developed over a time span and they are often related to life situations'.<sup>36</sup> From this research, three categories of objects were defined that facilitate the understanding of different kinds of subject-object attachment; these categories are: Meaningful Tool (where the activity an object enables, rather than the object itself, is the thing of meaning); Meaningful Association (where a product is significant as it carries cultural and/or individual meaning); and Living Object (an emotional bond is created between an individual and a product).<sup>37</sup> Jääskö and Mattelmäki describe the complexity of integrating meaningful content into design, stating that '[m]ore tacit and hidden aspects such as product meaning or personal motivation have influence in the user experience but are not that easily recognized or communicated to design'.<sup>38</sup>

### **Having and being**

In his seminal book *To Have or To Be*, social psychologist Erich Fromm pares human motivation down into two basic strands, 'having' and 'being'. According to Fromm, 'having' provides an archaic means of possession by enabling the consumer to 'incorporate' the meanings that are signified to them by a given object.<sup>39</sup> In this way, consumers are magnetically drawn to objects in possession of that which they subconsciously yearn to become:

*We are drawn to objects in possession of that which we yearn to become.*

We find the same connection between incorporation and possession in many forms of cannibalism. For example, by eating another human being, I acquire that person's power (thus, cannibalism can be the magic equivalent of acquiring slaves); by eating the heart of a brave man, I acquire his courage; by eating a totem animal, I acquire the divine substance the totem animal symbolizes.<sup>40</sup>

Incorporation of a similar nature can be witnessed in the world of goods, where consumers desire the qualities of a product, brand or lifestyle and attempt to incorporate them through the process of consumption.

Affordable props are often purchased to assist in this process, particularly in the case of exclusive brands. These props may include Ferrari T-shirts, Louis Vuitton scarves, Alessi corkscrews, Porsche baseball caps or even a pair of Issey Miyake

## CONSUMER MOTIVATION

socks. The consumer desire for financially unattainable lifestyles often provokes this mode of incorporation through some pretty tenuous associations.

When speaking of postmodern culture, social theorist Jean Baudrillard describes a contemporary detachment from reality toward a fabricated, and deeply abstracted, culture of signs. Baudrillard describes this process of reality fabrication as 'simulation', rendering McDonald's a simulation of convenience and Nike a simulation of street-wise independence. According to Baudrillard, consumption is motivated by a need for the simulation rather than for the physical products themselves.<sup>41</sup>

Consumption is not an isolated event or, perhaps, a split-second happening that occurs when products are purchased. Consumption is an unfolding process through which the external meanings and values, as signified by objects, are gradually internalized by the consumer through engagement. Sociologist Pasi Falk claims that consumption is a 'transformative and transcendent process of the appropriation and conversion of meaning'.<sup>42</sup> It is this process of appropriation and conversion that we as designers need to address, as it is through this process that strong connections between people and things are forged.

As discussed earlier, the consumption of material artefacts is largely motivated by the need to designate one's own particular being; matter serves to both *mirror* and *project* our values, beliefs and choices as an individual within an unstable and ever-evolving societal mass. 'People acquire and own things to give expression to who they are and to show what group of people they feel they belong to.'<sup>43</sup>

*Matter serves to both mirror and project our values, beliefs and choices.*

This self-defining mode of material engagement casts brief reflections through which we may both experience and evaluate our own individual life progress. Although a seemingly simplistic rationale for an issue of such apparent complexity, this single principle may well provide the very core of what drives the take-up and subsequent destruction of matter. In these instances, the desire to discard and replace is roused the moment objects lose their ability to effectively portray an individual's particular being; the complex assemblage of values and beliefs that collectively distinguish us as individuals are constantly changing, while the matter we deploy to portray these values and beliefs is relatively

*We keep objects that reflect current desirable identities and throw away ones that do not.*

frozen in time. This indicates that it is merely a question of time before the majority of our material possessions begin to fall behind. Simply put, when the products we own reflect desirable and up-to-date reflections of our existence, they get to stay; while products that do not, do not.

### Mapping need

To assist further comprehension, human needs may be mapped in several ways, initially by crudely polarizing them into two distinct categories consisting of *innate* needs and *acquired* needs. Innate needs are physiological and include, for example, the need for shelter, food and oxygen; whereas acquired needs are psychological and may include needs such as the desire for prestige, status, friendship and social recognition.

This fairly crude opposition created between life-threatening and life-enhancing needs is often discussed in terms of need and want: to need water but to want Coca-Cola. Yet this sets up an unhelpful opposition, as all forms of desire – from the whimsical to the life-threatening – are motivated primarily by need. For example, making friends, joining a collectors' club, interacting with other people or consuming branded products are all behaviours motivated largely by the social need for affiliation. In contrast, obscure tastes in music, wild hairstyles or the purchasing of quirky products are more likely to be motivated by the ego's need for a distinct sense of individuality, as separate from the wider society.

Classifications between need and want are frequently concocted as a means of adopting the moral high ground. For example, when a vacuum cleaner breaks beyond repair, it is considered morally acceptable to need a new one; yet it would be perceived as immoral to own two, three or maybe even 20 vacuum cleaners. These moral judgements are founded on the fragile premise that you only need one; yet in the less developed world, people survive perfectly fine without any at all, so whose concept of necessity are these moral guidelines based upon?

*Distinctions between need and want can be unhelpful in understanding motivation.*

### Maslow reconsidered

Needs may be mapped by polarizing them into two distinct categories consisting of *innate* (physiological) needs and *acquired* (psychological) needs. Abraham Maslow

## CONSUMER MOTIVATION

categorizes both innate and acquired needs within a pyramidal structure consisting of five hierarchical levels:<sup>44</sup> Known as Maslow's Hierarchy of Human Needs, this theoretical model outlines five key levels of need, consisting of *physiological* needs, such as water, food and breathable oxygen; *safety and security* needs, such as shelter, stability and a safe place in which to live; *social* needs, which may include companionship, tenderness and, perhaps, a sense of belonging; *ego* needs, which regularly include the need for prestige, status and positive self-esteem; and finally *self-actualization* needs such as the successful accomplishment of personal goals.

Maslow was a leader in the school of humanistic psychology, best known for his theory of human motivation, which led to a therapeutic technique known as self-actualization. Maslow's methods were unusual within the context of psychological practices of the time in that he chose to study exemplary people such as Albert Einstein, Jane Addams, Eleanor Roosevelt and Frederick Douglass rather than people who were mentally ill or neurotic as was the norm.

In Maslow's terminology, a need does not become salient until the needs below it are met. According to Thompson, '[w]hen we experience a need, at any level of Maslow's hierarchy, we seek to satisfy that need. This aspect manifests itself as *motivation*'.<sup>45</sup> Alderfer developed a comparable hierarchy with his Existence, Relatedness and Growth (ERG) theory, an approach that collapses Maslow's model to incorporate only three hierarchical tiers as opposed to five.<sup>46</sup> Although Alderfer's level-specific categorizations differ from Maslow's, his essential recognition of the hierarchical nature of need is the same. In contrast to both Maslow's and Alderfer's universally applicable structures of need, McClelland's theory of Acquired Needs suggest a more individually constructed framework that is acquired as a direct result of individual life experiences. For example, according to McClelland, a need for affiliation might come from being rewarded for making friends as a child.<sup>47</sup> In a naturalistic sense, humans possess underlying needs that are the same, regardless of nation, religion or culture. Elkins and Max-Neef identify these as 'subsistence, protection, affection, understanding, participation, creation, recreation, identity and freedom'.<sup>48</sup> Crucially, 'while these needs stay the same, what changes with time and between individuals is how we go about meeting or satisfying these needs'.<sup>49</sup>

In the context of Maslow's five-tier model, it may be said that the satisfaction of physiological needs and those for safety and security is practically a given (in the developed world). This concentrates remaining human need within the remaining

upper three levels. Therefore, consumer motivation is primarily driven by social, ego and self-actualizing needs. Although little study has been carried out to challenge Maslow's theoretical modelling of human needs, a study by Wahba and Bridgewell demonstrated its practically universal acceptance.<sup>50</sup> However useful, Maslow's model must not be taken too literally, as Virginia Postrel states:

Human beings do not wait until they have full stomachs and a roof that doesn't leak before they satisfy their aesthetic needs. Given a modicum of stability and sustenance, people have always enriched the look and feel of their lives through personal adornment and decorated objects.<sup>51</sup>

### The crisis of individual evolution

'The only thing that does not change is that everything changes.'<sup>52</sup> Life is transient, never fixed, always in a state of continual evolutionary flux. As the Earth steadily evolves, tides of biomass ebb and flow to its changing rhythms, from the sluggish adaptation of physiological evolution to the more ephemeral cadence of cultural change. Caught on the hook of constant transience, the biosphere itself exists in an ageless state of perpetual rotation, rebirth and renewal. Whether it be the fleeting life cycle of a butterfly, the intensity and quality of sunlight or the slow tidal erosion of coastlines, we inhabit an amorphous world in which absolutely nothing is fixed. Even the Earth's gravitational pressure is believed to fluctuate marginally in reaction to universal variants. Transience weaves the very fabric of existence, providing both physical and metaphysical nourishment to all things on Earth. The only constant state on this planet, therefore, is that of change; and this is the way it has always been.

When speaking of evolution, most people recount the work of nineteenth-century British naturalist Charles Darwin, conjuring up images of primitive apes evolving into hairy bipedal Neanderthals who, in turn, evolve into smooth-skinned *Homo sapiens* consumers. Although laced with a distinctly Western linearity, Darwin's *Change is the only constant*. theory outlines the most common perception of human evolution today. His theory – illustrated most clearly in his revolutionary work entitled *On the Origin of Species*, published back in 1859 – provides a macro illustration in which the transformative process of natural selection drives the evolutionary progress of nature.<sup>53</sup> Darwin's theory is of particular anthropological interest



**Figure 2.4**  
**Shape-shifting phone**

*Manufactured from biopolymer, the product reacts slowly, over a prolonged period of time, conforming gradually through use to the shape of your pocket.*

Source: Inheritable Futures Laboratory, 2008

Photographs by Inheritable Futures Laboratory

as it places all species within a temporal context and, in so doing, signposts both the origins and possible futures of any given species on Earth.

While Darwinian evolution may only be noticeable over several generations, other forms of evolution that occur far more swiftly are also taking place. On a cultural level, human evolution occurs on a daily, perhaps even hourly, basis. After all, we are continually growing and evolving – both as individuals and as a societal mass – and therefore may be described as existing within a similarly linear evolutionary timeline of perpetual growth and change. The nature of this kind of psychosocial evolution, however, yields even greater complexity, as it is both metaphysical and precariously random. It also lacks the rational singularity of natural selection due to its cross-contaminative social nature; we feed off each other and grow in reaction to the unpredictable and random experiences that we encounter through our daily lives.

### Flocking behaviour

Societies are cybernetic; therefore, individual evolution will interact reflexively with that of society at large. Recent studies from the Nomura Research Institute (NRI) suggest 'the consumption-related inclination of Japanese people very much resembles the flight patterns of a flock of birds'.<sup>54</sup> The NRI mapped the flocking behaviour of birds in an attempt to gain further understanding of the societal influence over consumer motivation. They subsequently streamed the birds' behaviour under three key principles:

- 1 A bird flies towards any large concentration of birds.
- 2 A bird flies at the same speed and direction of other birds.
- 3 A bird keeps its distance from nearby birds or barriers that come too close.

Just as a bird determines its actions on the basis of the three principles cited above by only watching the movements of other birds, Japanese consumers similarly keep an eye on what is happening around them and make decisions in accordance with the three basic values.<sup>55</sup>

Anyone familiar with the crowded Saturday afternoon Oxford Street shuffle will no doubt agree that these theories may also be applicable to consumers who are not of Japanese descent. Furthermore, shared societal values shape and influence all individuals to render their version of individuality a simple adaptation of the prevailing social norm:

## CONSUMER MOTIVATION

Seeking shelter, for example, essentially means the inclination to buy brand-name goods with the aim of seeking the approval and support of others. Similarly, pursuing fashion means the desire to stay abreast of what others are doing, while adhering to specific features caters to the pride of demonstrating one's uniqueness by purchasing goods that are slightly different from those owned by others.<sup>56</sup>

There can, therefore, be no such reality as an individual separate from society, just as there can be no societal mass without the presence of individuals. Indeed, the utopian myth of absolute individuality lurks deep within the consumer psyche; yet it is just that, a utopian myth.

*Individuality is a myth we all pursue.*

## Beating down the wilderness

Urban parklands with their self-consciously landscaped lawns and seemingly random arrangement of trees provide a highly controlled caricature of nature. As programmed as an airport lounge, these green spaces are a contrived and subordinate muse rather than windows into the natural world – a neutered, manageable version of nature, just how we like it.

*Lawns are a neutered, manageable version of nature, just how we like it.*

Parks and gardens illustrate the extent to which we are prepared to live with nature today. They provide us with a sterilised, controlled and manicured rendering of the natural world to be enjoyed on free weekends or long balmy summer evenings. However, there is a manufactured linearity underlying an avenue of poplar trees or a crescent-mooned rockery that is symptomatic of the human desire to control and manipulate all life on Earth. In this light we can see that wilderness is nature at work and play whereas 'a lawn is Nature under totalitarian rule'.<sup>57</sup>

*Wilderness is nature at work and play; a lawn is Nature under totalitarian rule.*

In an attempt to civilize the inhabitable regions of the Earth – through urban development, use of ever more complex technology, greater population densities, economic growth and other such advancements – we have stretched a skin of domestication atop the natural world, which now serves to smother all beneath it. We ourselves have become domesticated by the tide of civilization, and through this

process, human wildness – or human nature – has been recalibrated to a point where we no longer consider ourselves to be adjoined with nature. Our wildness has been conditioned out of us, and we consider ourselves to be alone as a species.

*We have stretched a skin of domestication over the world, smothering it into subordination.*

Despite the accumulation of knowledge and experience so often attributed to the ageing process, it is seldom welcomed. The onset of age is often perceived as a debilitating phenomenon; whether the first grey hair, the rotting timbers in the attic or the erosion of a sandstone riverbank, transience antagonizes the human desire for mastery over all things by reminding us of our fleeting impermanence on this Earth. ‘Human consciousness arose but a minute before midnight on the geological clock. Yet we mayflies try to bend an ancient world to our purposes, ignorant perhaps of the messages buried in its long history.’<sup>58</sup>

For centuries, the human species has somewhat ignorantly striven to isolate itself from nature’s decaying realm. Many researchers are beginning to suspect that ‘we shall continue to have a worsening eco-logic crisis until we reject the Christian axiom that nature has no reason for existence save to serve man’.<sup>59</sup> Furthermore, it is notable that ‘the word *wilderness* occurs approximately three hundred times in the Bible, and all its meanings are derogatory’.<sup>60</sup> This clearly indicates an early Western disapproval of natural systems, the anthropocentrism of which must be both learned from and, ultimately, surpassed.

*For centuries, we have striven to separate ourselves from nature's unpredictability.*

As the Hindu proverb states, no physician is really good before he has killed one or two patients. We as a postmodern society have made some grave errors, and now it is time to learn from them. ‘For 200 years we’ve been conquering Nature. Now we’re beating it to death.’<sup>61</sup>

Doggedly pursuing the dream of an enhanced durable world has enabled us to fabricate a plateau of material immunity; durable metals, polymers and composite materials have enabled us to construct this synthetic ‘futurescape’. Immune to the glare of biological decay, these materials grossly outlive our desire for them, and so the man-made illusion of control bares its first predicament: waste. Moreover, in

*Immune to biological decay, resilient materials grossly outlive our desire for them.*

## CONSUMER MOTIVATION

desperately beating down the wilderness of this chaotic world, we have pinned things down and categorized them within rigid rules, formulaic principles, theoretical structures, mathematical systems and a host of other regulatory systems. In so doing, we have also created a cage-like world of predefined rules that now serve to cripple us through their own rigid inability to adapt with changing times. *'No theory ever agrees with all the facts in its domain; yet it is not always the theory that is to blame. Facts are constituted by older ideologies, and a clash between facts and theories may be proof of progress.'*<sup>62</sup>

In our pursuit of permanence, we are fundamentally at odds with the most essential underlying principle of the natural world: change. Change is part of the basic nature of all things. Whether we are talking about major changes in state such as the demolition of a 40-storey block (one minute it is there, the next it is not) or something more discreet such as your finger nails growing, change is all around us.

Change and the impermanence of all things have forever troubled us humans – that whispered taunt, just beneath the level of awareness, that reminds us of our own mortality and that of all things on Earth. As streams of matter and energy flow continuously in and out of each other, we realize that the one constant in all of this is change itself. The more we attempt to overcome this fact, the less in tune with natural processes our thinking becomes and the more alien our resulting practices become.

In evolutionary biology, it is not the strongest species that survive, nor the most intelligent, but those that are the most responsive to change. In resilience thinking, this innate capacity to absorb disturbance and accept change (rather than to defensively resist and block it) is key to success. In the made world, however, this is sorely misunderstood, as is the ever-present tension that exists between states of change and stability in that they are generally considered at odds with one another.

Even with thoughts and ideas, the pursuit of fixed, solidified ideologies is highly prized. The level of value assigned to theories, for example, often relates directly to their longevity and how well they have stood the test of time. This 'resilience' is highly prized, and serves to illustrate just how afraid of change we really are. When

*It is not the strongest species that survive, but those most responsive to change.*

*We use material metaphors such as 'concrete' to elevate the status of our opinions.*

describing the metaphysics of 'rigour', John Wood tells us how our desire to believe in rigour coincides with a popular idea of rigidity as a paradigm of the so-called real world. We continue to speak of 'firm foundations' and use material metaphors such as 'concrete', 'iron-clad' and 'material' to elevate the status of thoughts and opinions.<sup>63</sup>

In creating order, we have simply increased the likelihood of disorder, and the rapid deterioration of the biosphere provides living testimony to this single contradiction. The current model of developed-world production and consumption is fundamentally incompatible with natural systems; people are not rational or logical – they are moody, temperamental and erratic, which lends a peculiarity to the current model of design and manufacturing that, in comparison, is a monosyllabic drone of mass-manufactured monotony.

*People are not rational or logical; they are moody, temperamental and erratic.*

'Some products are discarded before they are physically worn out or are technically superseded because their design is out of fashion or inappropriate to changed circumstances.'<sup>64</sup> When objects fall into disuse in this manner, we begin to see an alternative to the conventional model of obsolescence in which goods are nullified by substantial shifts in technology, format or other operational protocol.

Rather, obsolescence is also a consumer-side issue, driven by the failure of products to quench the human thirst for new, fresh experiences. We outgrow what was once great; we become familiar to the greatness and, as we acclimatize to it, our expectations increase. The newly evolved self becomes impatient with that which – in evolutionary terms – holds it back; affection is immediately withdrawn and empathy subsequently fades. Thus, our initial adoring perception of the static-in-time product rapidly transforms into the resentment of a product that is now very much obsolete.

*The newly evolved self experiences the product as a stale reminder of a past self.*

'Consuming has ambiguous qualities: it relieves anxiety, because what one has cannot be taken away; but it also requires one to consume ever more, because previous consumption soon loses its satisfactory character.'<sup>65</sup> These phenomena of individual evolution and the outgrowing of products have intensely destructive

*Products must co-evolve with users, revealing their meaning gradually over time.*

## CONSUMER MOTIVATION

implications for the sustainability of consumerism; one-way evolutionary growth will only lead to the superseding of the other. In these cases, a total metaphoric consumption occurs that leaves objects with nothing more to offer their newly evolved users. For users at this juncture, products become nothing more than worthless husks of their former selves. To avoid such wasteful obsolescence, products must mutually evolve alongside users, sustaining value by revealing their true beauty only through the slow passing of time.

### The deflowering gaze of familiarity

Consumption may be viewed as a process in which we attempt to know, familiarize and, ultimately, outgrow the wonders of artefacts. In 1943, French philosopher, playwright and political activist Jean Paul

Sartre referred to this destructive mode of knowledge seeking as 'deflowering'. In his classic existential work entitled *Being and Nothingness*, Sartre states that to have seen

through and therefore know is to deflower the entity.<sup>66</sup> The uptake of products is partially motivated by this notion of deflowering, as we consume the unknown in order to demystify and familiarize. Waste, therefore, is as much a part of the consumption experience as purchase and use since it is evolution made tangible. Evolving objects and experiences would scupper consumers' attempts to deflower them by adopting a restless state of evolutionary growth to ensure that they always remain one step ahead of the user.

The developmental relationships that exist between owners and their pets are demonstrative of this phenomenon; after all, how often do dogs become obsolete?

Phillip Gregory of BS Technologies' Silicon Valley Research Lab states that one of the greatest pleasures of owning a dog is its stupidity. 'What greater joy is there than throwing a ball and watching him run after it

until he realizes that you never let go? Or the way you can say anything at all to him, and as long as you use the right tone, he'll wag his tail regardless?'<sup>67</sup> Modern products seriously lack this kind of character and allure; they are too smart and precise, removing all possible surprise, mystery and, perhaps above all, charm from the process of engaging with them.

*On a symbolic level, waste is a key part of the consumption experience.*

*Dogs tend not to become obsolete; their value grows over time.*

### The mirror stage

As mentioned earlier, we as individuals are constantly evolving – but for what reasons, and why do we always move forward? What is it that we so desperately strive to evolve away from? In 1936, at a conference of the International Psychoanalytical Association in Marienbad, Jacques Lacan introduced what he referred to as the 'mirror stage'. In the mirror stage (an important early component in Lacan's critical reinterpretation of the psychoanalytical work of Freud), infants aged 6–18 months recognize themselves in the mirror as a whole and separate entity instead of the fragmented movements and undefined boundaries between self and other that have constituted their experiential world up to that point; the infant identifies with the image, which serves as a *gestalt* of the infant's emerging perceptions of selfhood.

Lacan asserts that, once experienced, this craving for individuality will remain active until death; the clumsiness witnessed has the effect in man of an organic insufficiency in his natural reality. This event is

later manifest as an enduring sense of imperfection while constantly needing and looking forward to achieving perfection; as consumers, we thus spend the present

*We spend the present creating the future to outdistance the past.*

creating the future to outdistance the past. In *Ecrits* (1966), Lacan describes the birth of this need as the transformation that takes place in the subject when he first assumes a self-image.<sup>68</sup>

### Ego

Meaningful connotations are as powerfully dangerous as they are complex; they set up demanding expectations within the consumer at both rational and emotional levels. A consumer will identify powerfully with meanings that support their own perception of themselves. This closes them off to contrasting meanings that could be said to challenge or devolve that fragile self.

*We identify powerfully with meanings that positively reinforce our desired identity.*

Freud attributed this behavioural foundation to the origin of ego, which, according to both Lacan and Freud, exists as an accumulation of aspirations and dreams. The ego maintains false appearances, portraying an aggregate self-image of coherence, completeness and success. 'The ego is thus always an inauthentic agency,

## CONSUMER MOTIVATION

functioning to conceal a disturbing lack of unity.<sup>69</sup> Consumption therefore assists the construction of a desired identity through which the self and other may be subsequently defined and through which people may mediate their particular values and motivations as individuals within society.

The consumption of heavy signifiers such as BMWs and Gucci bags fits neatly into this rationale, shedding further light on the human desire to surround oneself with what might best be described as 'meaningful stuff'. When discussing emotional attachment, Freud claims that '[a]t the height of being in love, the boundary between ego and object threatens to melt away. Against all the evidence of his senses, a man who is in love declares that "I" and "you" are one, and is prepared to behave as if it were a fact.'<sup>70</sup> This gives strong clues to the origins of our desire to consume and surround ourselves with meaningful stuff. '[T]he ego is constituted by an alienating identification, based on an initial lack of completeness in the body and nervous system.'<sup>71</sup>

As a materialist society, we commonly represent and mediate the fabric of our egos through objects as opposed to language. Verbal communication is insufficiently equipped to provide us with an absolute identity, as other people also use the words we use; we do not own them and '[t]he words do not belong to us'.<sup>72</sup> In contrast, objects stimulate the ego's desire to conceal our private insecurities as their ambiguous meaning may be interpreted in a number of ways. Thus, in reaction to the failure of speech in designating our particular being, we employ objects to do the talking for us. Interestingly, substantial evidence from the research fields of psychoanalysis and linguistics indicates that the more people experience alienation in speech, the more they will separate themselves from it to find refuge in the silent yet meaningful embrace of objects.

Today, the symbolic world varies tremendously according to social groupings and evolves over time. Furthermore, it is not only language that changes with the advancements of society, but also the meanings that these words signify. Just as in the case of mass-manufactured objects, language, too, is in possession of evolutionary characteristics and is thus of a similar instability. For example, while the word 'oasis' once meant an isolated area of vegetation within a barren environment, it is

*The ego constructs false appearances, portraying coherence and success.*

*We commonly mediate our egos through objects as opposed to language.*

now a rock group, and ‘most people, asked recently in a survey what they associated with the word Madonna, replied sex, not the Virgin Mary’.<sup>73</sup>

### **Empathy has a lifespan**

Most products are capable of creating at least a small amount of empathy at the point of purchase; from this point on, however, product longevity is soberly dependent upon the sustainability of that empathy. Like everything in this unstable world, empathy, too, has a lifespan, governed – in this case – by the type of relationship that is evident between the user and the object.

Waste, therefore, is a symptom of expired empathy, a kind of failed relationship that led to the dumping of one by the other. As

*When the adoration and meaning fades, the original pair bond weakens.*

in so many other relationships – particularly

inter-human pair bonding – when the adoration and meaning fades, the original pair bond weakens. Another fresh bonding urge is then motivated, often resulting in the acquisition of another; the original relationship is superseded and the partner is rendered obsolete. Mutual evolution will effectively transcend obsolescence of this nature by successfully carrying the partnership well beyond its passionate early stages. Desire for fresh reflections of the ever-evolving self also manifests itself through a resentment of the stale. In defining consumption as a meaning-seeking process, you automatically reframe the very idea of waste; waste becomes a symptom of expired meaning – a statement from a newly evolved self.

Our existence has no foundation on which to rest except the transient present. Thus, its form is essentially unceasing motion, without any possibility of that repose which we continually strive after. It resembles the course of a man running down a mountain who would fall over if he tried to stop and can stay on his feet only by running on; or a pole balanced on the tip of the finger; or a planet which would fall into the sun if it ever ceased to plunge irresistibly forward. Thus, existence is typified by unrest.<sup>74</sup>

In evolutionary terms, to consume is to aspire, and to waste is to stride forth in triumph. Therefore, the origin of the ecological crisis we face appears to lurk deep within a single, yet profoundly universal, inconsistency. Consumer aspirations continually evolve whereas products are hopelessly frozen in time. As we consume further meaning, our ideals change and shift, as does our experience base upon which we

## CONSUMER MOTIVATION

found a sense of self. The consumer quest for meaning continues as it always will; however, until products embody a transient flexibility to shift and adapt in sync with us, we will always be adding to an immense landfill of transferred matter whose only crime was a failure to keep up.

*To consume is to aspire, and to waste is to stride forth in triumph.*

## Metaphysical versus physical

Various notions of product life orbit the creative sphere and have done so for some time. In the majority of cases, objects are supposedly rendered durable via the specification of resilient materials, repairable technologies and robust design engineering. This somewhat cautious approach to product life extension adorns products with physically enduring properties in pre-emption of their rough lives to come. Yet this objective model of durability also places pressure on the biosphere: once they have been discarded, products born of this mindset become acutely counterproductive.

*Desire, love and fascination can also break, or stop working.*

Few would contest that the principal endeavour of durability is to optimize the functional life of objects. Thus far, the creative methodologies addressing design for durability are monist, single-minded approaches that attend to the physical, cosmetic survival of artefacts. In these somewhat superficial scenarios, durability is distinguished purely by a product's physical endurance, whether cherished or discarded; engineers therefore slap each other's backs in triumph as fully functioning hairdryers emerge from a five-year landfill hiatus. Is this durable product design, or simply the designing of durable waste? In addition, product failure is essentially characterized by blown circuits, stress fractures and a host of other technical and physical glitches; in attending solely to physical ageing, designers overlook numerous invaluable metaphysical renderings of durability. As a creative industry, it is vital that we break away from the physical and begin to understand more about the sustainability of empathy, meaning, desire and other metaphysical factors that influence the duration of product life – nurturing a new and enlightened wave of design built on a deeper understanding of how consumers create and sustain attachments within this overabundant material world.

*Lab-coated engineers high-five each other as working hairdryers emerge from landfill.*

# chapter

# three

attachments

to

objects

*In a world smothered with ‘stuff’, emotional attachments with objects seldom outlive the honeymoon period – desire, mystery and fascination can all break.*

### **Little treasure**

I kneel to reach beneath the bed, with outstretched fingers as my eyes; that region of the floor, seldom penetrated by daylight – or the vacuum cleaner nozzle – provides a refuge for treasures of immeasurable value; my dusty fingers spider to the left, and to the right, before falling upon the corner of a small box. I fumble it into my grip before slowly drawing it into the light. Holding the box in both hands, I kneel on the wooden floor for a moment, still, watching the lid as if it were about to blow off, due to power of the meaning locked within. I lift the lid and peel back tinder-dry layers of tissue paper to reveal two smooth stones.

These are not diamonds, rubies or emeralds, nor are they Stone Age spearheads or ancient Roman artefacts – to me, they are so much more precious than that. They are Sussex flint from a stretch of beach near Worthing, a quiet stretch of



**Figure 3.1**

**Little treasure**

*Each of us own things that we are powerfully attached to and that hold huge levels of significance and personal meaning, despite their lack of monetary value.*

Source: Jonathan Chapman, 2008

Photograph by author

shingle beach that must contain over a trillion near-identical stones. But they are not these two stones. My son Jasper collected these stones when he was a toddler. He brought them up the beach to me like a triumphant archaeologist returning from the field, still buzzing with the drug of discovery. Both the size of fat autumn plums, although one noticeably larger than the other, these stones, he said, are 'a Daddy' and 'a Jasper' – ourselves transposed in stone, so to speak.

So I kneel on the wooden floor, with dusty hands, looking into an old shoebox with two stones in it, my mind playing back movies of what has been and inventing new ones depicting what has yet to be. And so, in an experiential sense, I am not really in my bedroom at all. With my mind now awash with memory, I am back on that beach in Sussex, watching my young son scramble his way up the shingle to show me his prize. Arguably my two most treasured possessions, these stones are more powerful than any photograph, or QuickTime file. They remind me that I am

a father and that my son sees me in this way . . . I felt it. Furthermore, the origin of these rocks is rooted in a slower, geological-time, which gives them an enduring permanence. I find this reassuring in a world where nothing stands still.

Now a symbol of our relationship, I begin to superimpose meaning onto the stones that Jasper himself had never intended – the smaller stone is lighter in colour; could this be innocence? The larger stone is bumpier; what could that mean? To me, the stones are a memory container, a totem, a symbol, a time machine, a connection, and they are these things because of the meaningful associations I have with them. To others who do not share these meaningful associations, the stones are, well, just stones . . . apart from you of course, as you now know the story.

*Our most treasured possessions are often worthless to others.*

### The dawn of material culture

Ample historic evidence exists to suggest that even earlier versions of our present selves may have fabricated some form of material culture – a culture riddled with such familiar-sounding traits as interactivity, symbolism, inter-societal comparing and strong emotional attachments to one's material possessions. Yet, despite the extensive archives of research that are available to us today, it still remains uncertain as to how, when and – perhaps more interestingly – *why* our species developed toward such a materialistic value orientation.

Earlier forms of material culture embodied an animistic appreciation of the physical world not too different from the way we perceive it today. Animism of this nature was prevalent among primitive peoples with the 'belief that inanimate objects and the phenomena of nature are endowed with personal life or a living soul'.<sup>1</sup> Examples of this might include feathers believed to be sacred, pebbles that could heal the sick or a tiger bone possessing the strength and vigour of the deceased animal. All of these items could be owned and thus afforded the owner with their signified properties, in a similar way that a Prada bag might instantly afford elegant sophistication today.

*We form superstitious and animistic appreciations of the physical world.*

Archaeologists have made numerous findings that point to the prehistoric origins of material culture. Hunter-gatherers of the Upper Palaeolithic period of the late Pleistocene epoch left a rich legacy of cave paintings, tools and body adornment

## ATTACHMENTS TO OBJECTS

and a wealth of other material artefacts. The Kenyan site of *Enkapune Ya Muto* – Twilight Cave – has turned up beads made from ostrich eggshells, which date back approximately 40,000 years. It is believed that

their maker shaped the crude, circular pieces from fragments of ostrich eggshell, thinning each one and drilling a hole through the centre. Many of them broke before they were finished. An unknown Stone Age artisan spent hours crafting these decorations rather than searching for food, tending children or making tools.<sup>2</sup>

Anthropology professor Richard G. Klein believes the eggshell beads and other such findings indicate the very dawn of material culture. Klein states that:

with their new sense of aesthetic, they made the first clearly identifiable art. And they freed themselves to wander beyond the local watering hole – setting the stage for long-distance trade – with contrivances like canteens and the delicately crafted eggshell beads, which may have functioned as 'hostess gifts' to cement goodwill with other clans.<sup>3</sup>

Klein maintains that these events have influenced the development of the human species more than anything else in recent times:

Forget about upheavals like the Russian and French Revolutions, which produced mere changes of costume. Forget about the construction of the first cities or the introduction of the internal combustion engine. The revolution that made the biggest difference occurred on the Savannah of East Africa roughly 45,000 years ago.<sup>4</sup>

## The cultural Big Bang

Most anthropologists agree that about half a millennium ago, human creativity somehow skyrocketed in a kind of cultural big bang. The reasons for this genesis are unknown, although speculative theories abound. Some claim that 'humans suddenly crossed a threshold of creativity after a long, slow build-up in population',<sup>5</sup> implying that it was only a matter of time before things got interesting. Others state that 'a radical population boom set off a maelstrom of competition between groups, inspiring rapid innovation'.<sup>6</sup> When discussing the development of Neolithic material culture, Russian anthropologist D. V. Gerasimov claims that changes of pottery depended more on a change of fashion caused by contacts with neighbouring

tribes.<sup>7</sup> We can, therefore, see that the social malaise of continual comparison and competition was rampant even in these relatively primitive times.

Although the ways in which we manipulate matter today may have developed beyond recognition, our existential utilization of material objects to designate our own particular being remains unchanged:

According to Marx, the things we make ourselves acquire all the characteristics of ancient fetishes. They are endowed with spiritual qualities that we don't understand and they are ruling us instead of serving our needs. Marx considers this a reversal of the normal subject–object relationship.<sup>8</sup>

Similar logic reversals occurred in the transition from modernism to postmodernism. 'In the [1950s] modernism ended with contemporary style, when the way was paved for pop design and, eventually, post-modernism, some 20 years later. From then on not the function of the object became the key issue, but its meaning.'<sup>9</sup> In direct contrast to function-oriented modernist methodologies, the creative endeavours of postmodernism place meaning way before function:

Products become icons, symbols or signs. They do not even need to be durable anymore, as they did for early modernists. This indicates that to post-modernism, matter is even less important. Objects are seen as embodiments of meaning, and it is from this perspective that they have to be designed. The platonic anti-materialism is evident. Post-modern designers are not primarily concerned with things, but with ideas.<sup>10</sup>

### Toward individualism and materialism

In a study of the design of products geared toward a more prominent model of subject–object connectivity, DiSalvo *et al.* found that:

Issues of emotion, affective response, and inclusive human concerns are exceedingly important in design. As people become more sensitive to dimensions of products that go beyond traditional aspects of usability, the need to understand and create emotional and aesthetic resonance between people and products increases.<sup>11</sup>

Similarly, the Design and Emotion Society believe that '[t]he concept of experience, where the subject and object meet and merge with one another, is a key issue in

## ATTACHMENTS TO OBJECTS

designing emotionally meaningful products. This is because experience is a space in which all faculties, especially emotions, are activated.<sup>[12]</sup> This relates directly to the Freudian analysis of attachment between people and things, wherein '[a]t the height of being in love, the boundary between ego and object threatens to melt away'.<sup>[13]</sup>

In addition, a study by Schifferstein et al. found that '[m]emories significantly enhance attachment formation ... the extent to which a product evokes memories is positively related to the degree of consumer–product attachment'.<sup>[14]</sup> The conclusions of this study state that:

If a designer wants people to become attached to his/her product, the present study suggests that s/he should facilitate ways to form associations between the product and people, places or events (memories), or s/he should design an object that evokes enjoyment.<sup>[15]</sup>

The utilization of matter as a signifier of meaning is anything but a modern preoccupation, driven by primal urges that have lurked deep within us, always. Materialism, however, developed incrementally by somehow managing to stay within the carrying capacities of the natural environment.

Furthermore, materialistic lifestyles were compatible with tribal life and did not obstruct pair bonding, friendships, intimacy or other vital sociological functioning. It is worth noting that 'the history of consumerism shows that there is a relationship between changes in culture and changes in consumption patterns. It shows further that these changes move away from communal values toward individualism and materialism'.<sup>[16]</sup> Having such a materialistic value orientation leads individuals to desire material objects communicating their financial success, desirable status and power.

During recent years,

*Materialism has us chasing objects that cast us within desirable and coveted roles.*

there has been a move away from both intrapersonal and interpersonal relationships to a new mode of relations. The direction of this move has been to the surface. The resulting mode of relating is best described as extropersonal. This term is meant to describe an outwardly personal relationship. This outward focus denotes a relatedness with the surface or exterior, as distinguished from the mind or spirit.<sup>[17]</sup>

Furthermore, 'the extropersonal relationship is the prominent type of relationship today, and results from the pervasiveness of consumerism in our society'.<sup>18</sup> This can also be seen clearly in cultural historian Philip Cushman's notion of the empty self characterized by a pervasive sense of personal emptiness that uses consumption as a means for filling up, and where loneliness is embodied as emotional hunger.<sup>19</sup> Desire to engage in meaningful relationships with material objects may therefore emerge from this emptiness, existing as a futile effort to re-centre oneself.

Today, communal life is fragmented over countless relationships, not with one another but with objects, brands and other designed experiences. At some point during the last 100 years we learned to find refuge outside the species in the silent embrace of manufactured objects. Why we migrated in this particular direction no one is quite sure; most believe that we were seduced by the speed and streamlined efficacy of a modern manufactured world. Many blame the mid-1900s Industrial Revolution for today's overabundant production, consumption and consequent environmental decay, stating that such enhanced production capabilities were beyond our control – like giving a Ferrari to a four-year-old. Others are beginning to suspect that the drivers underpinning modern materialism are non-economic, reflecting a disturbing lack of wholeness within the self.

*We seek refuge in the silent  
embrace of manufactured  
objects.*

Researcher Fritz M. Brunner believes that

besides political and economical factors, the absence of spirituality has also led to the growth of consumerism. Without a figurehead in their lives to guide them spiritually, people have no sense of direction. Instead, they seek solace in material things and procure them not because they need them, but they have to fill that void of emptiness within their souls by spending on themselves.<sup>20</sup>

Similarly, in the creative industries, it is accepted that we are where we are today because of the symbolic power of objects in signifying desirable identities and consumable destinies. Realistically, it was most likely a cocktail of these and several other theories that came together like a mid-air collision some time during the last century to create the grossly transient mode of materialism that we push through today.

Indeed, as we fumble our way through life, attempting to make sense of it along the way, our need to find explanation leads our minds beyond reason and into the supernatural. On describing memorabilia and the power of inanimate objects, Bruce

## ATTACHMENTS TO OBJECTS

Hood, author of *Super Sense* (2009), undertook an experiment in which he first handed out a black 1930s fountain pen, which, he falsely claimed, belonged to Albert Einstein. Everyone in the audience was desperate to hold it and showed great reverence and awe toward the object, as though part of Einstein's soul somehow resided within it. Hood then held aloft a tattered old cardigan and asked who would be willing to volunteer to wear it. Many offered to do so until it was revealed that the cardigan belonged to Cromwell Street's notorious serial killer, Fred West. Promptly, almost all of the volunteers lowered their hands.<sup>21</sup>

Hood claims that this change of heart revealed something odd: audience members sitting next to those who kept their hands raised, and were willing to wear the killer's cardigan, visibly recoiled in repulsion of their neighbour's openness to this. The cardigan no longer the prime source of repulsion, but, more interestingly, the person who felt fine wearing it, or even handling it, had to be avoided also.

Conversely, it may also be said that we are drawn toward those who reflect our values, and this need for affiliation can be seen in both human–human and human–object relations. Moving toward those who share your values inadvertently creates distance between you and those with whom you wish not to be associated. This swarming behaviour is a key factor in our emotional survival – as a society and as individuals. Objects play critical roles in distinguishing us from one another in this way, and there is consensus in social psychology that this form of stereotyping, or group identification, is virtually universal.<sup>22</sup>

### Desire and disappointment

Design is in no way *clean*. The end product may look sleek, but the process of getting there can be messy, with a scrap heap of ideas, aspirations and opportunities left on the floor. In this oversaturated world of people and things, durable attachments with objects are seldom witnessed. Most products deliver a predictable diatribe of information, which quickly transforms wonder into drudgery. Although emotional attachments are not extinct just yet, durable connections between users and their mass-manufactured counterparts are very rarely forged:

*Lasting attachments with objects are rare.*

Engagement has become a rare commodity now that the great emancipatory narratives have fallen silent and designers have become individualistic and realistic. Our age is one

of total relativism. We lack a common purpose. Design has become a practice without content, geared towards surface appearance and financial success.<sup>23</sup>

Perhaps through our unhealthy modern-day fixations with technological contemporaneity, the surface characteristics of products and their ability to quickly generate sales, we have inadvertently designed away the more poetic and enduring characteristics of material culture. In so doing, we have formulated a transient and unstable platform of goods upon which the hopes and dreams of users must precariously balance.

Consumers are unable to develop and sustain attachments with objects in possession of such traits as they lack the diversity and pluralism of character required to healthily sustain enquiry. The ensuing sequence of desire and disappointment that follows comes with a distinctly checkout-beeping regularity and, thus, provides a vital cornerstone of the capitalist system. It should be noted here that the ecological crisis resulting from the excess of material culture is almost exclusively geared around the economic interests of the developed world. 'Globally, the 20 per cent of the world's people in the highest-income countries account for 86 per cent of total private consumption expenditures – the poorest 20 per cent a minuscule 1.3 per cent.'<sup>24</sup> A gross inequity exists between the economically developed and undeveloped nations of the world; yet the environmental problems caused by excessive material consumption affect all under the sun:

We consume a variety of resources and products today, having moved beyond basic needs to include luxury items and technological innovations to try to improve efficiency. Such consumption beyond minimal and basic needs is not necessarily a bad thing in and of itself, as throughout history we have always sought to find ways to make our lives a bit easier to live.<sup>25</sup>

However, in the developed North, human relatedness with the material world has become both excessive and unstable. Products are mindlessly cast aside to make way for newer and fresher experiences with shocking regularity. Perhaps due to the normalcy of innovation, material culture has adopted an expendable and sacrificial persona. Today, an edgy sense of instability surrounds contemporary material

*Due to the normalcy of tech innovation, material culture has a sacrificial persona.*

## ATTACHMENTS TO OBJECTS

culture, nurtured by continual change to render its offspring fleeting, transient and replaceable orphans of circumstance. Tonight, a flat-screen Trinitron TV lies face down, discarded like a spent cigarette, in the wet space between pavement and road; an abandoned refrigerator stands outcast in a dark suburban alleyway; an Apple Macintosh from the beige era garnishes a skip filled with construction rubble.

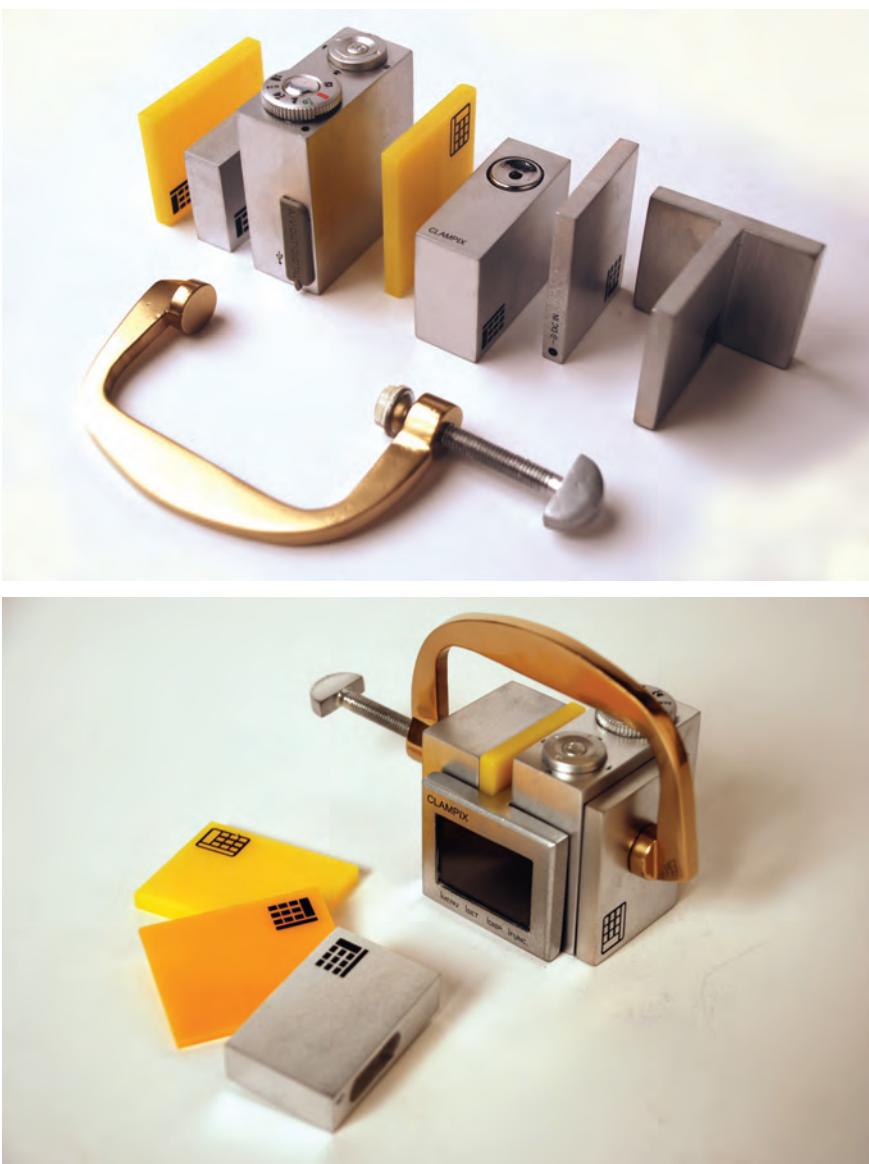
Van Nes and Cramer argue that products must be dynamic and flexible in order to accommodate these instabilities, stating: '[w]hat people basically want is a well functioning and up to date product that meets their altering needs. The dynamic nature of this desire requires a similar approach: the development of dynamic and flexible products.<sup>26</sup> Objects that grow with users are generally more effective in achieving deeper levels of attachment, provided they do not excessively arouse the user; if this happens, ability to coherently interact deteriorates correspondingly.

### The honeymoon period

The passionate early stages of a subject-object relationship could be described as a honeymoon period – a period of intense synergy during which everything is new and interesting and the consumption of one another is feverish. Honeymoon periods are by their very nature short-lived and must, ultimately, give way to the inevitable onset of normalcy. In human–human scenarios, the transition from honeymoon to normal daily life is ordinarily smooth and occurs without too many problems. This is largely because the expectations of most newlyweds are reasonably well synchronized with reality and, therefore, disappointment is seldom nurtured by the transition. In most cases, disappointment may be characterized quite simply by a real-time imbalance between expectation and reality. Therefore, the utopian futures promised by most products at the point of purchase set up grossly unrealistic expectations within consumers, and these expectations practically guarantee disappointment the moment honeymoon periods draw to a close. In consequence, emotional attachments with objects are generally fleeting and seriously lack qualitative substance.

In the human–object scenarios world, transitions from honeymoon to daily life are anything but smooth and occur with an awakening jolt. In this context, it can be seen that the onset of normalcy sounds the death

*The onset of normalcy sounds the death knell for most objects.*



**Figure 3.2**  
**Clampix**

*The object has a ‘backbone’, resistant to technological change, providing material continuity and enabling the repair/upgrade of individual modular components.*

Source: Inheritable Futures Laboratory, 2008 Photographs by Inheritable Futures Laboratory

## ATTACHMENTS TO OBJECTS

knell for most objects and, thus, must be regarded as nothing less than the beginning of the end. During recent years, consumers have become serial honeymooners, and today subject-object relationships are less marriage, more one-night stand.

*Subject-object relationships are less marriage, more one-night stand.*

Modern consumers are short-distance runners, promiscuous debauchees who only stay for the getting-to-know-you period, when all is fresh, new and novel. In these scenarios, waste is nothing more than a symptom of a failed relationship, a failure that led to the dumping of the static one by the newly evolved other. As is so often witnessed in human pair-bonding relations, the original bond weakens when adoration fades. Fresh bonding urges are promptly motivated, resulting in the acquisition of another. Thus, the original relationship is superseded and the partner is rendered obsolete. In a sense, we outgrow what was once great, feeling we no longer need them or, perhaps, could do better. We become familiar with their greatness, and as we acclimatize to it, our expectation of greatness itself subsequently increases. The newly evolved self soon becomes impatient with that which, in evolutionary terms, holds it back. Adoration rapidly mutates into a resentment of a past that is now outdated and obsolete.

This common phenomenon of individual evolution and the outgrowing of a product yields intensely destructive implications for the sustainability of consumerism. One-way polarized growth motivates a superseding of the static other, a kind of total metaphoric consumption that leaves the product with nothing else to offer the user.

What does this situation present to the consumer other than the impulse to seek stimulation elsewhere and hit the high street once more – only to be seduced by a newer and shinier version of the predecessor, which in time will certainly succumb to an identical fate? ‘The human being is engaged, throughout his life span, in an unceasing struggle to differentiate himself increasingly fully, not only from his human, but also from his non-human environment.’<sup>27</sup> Consumerism and waste are at the mercy of a constant human search for fresh, current definitions of individuality. The contemporary model of capitalism feeds off this socially antagonistic mode of serial dissatisfaction. Physical objects are not the focus of our deep desires; they are merely tangible entities that transport, package and render various meanings perceivable. In this respect, objects provide vehicles for the delivery of meaningful signifiers, and we engage faithfully and passionately with them, at first anyway.

## **From honeymoon to daily grind**

Objects capable of sustaining long-lasting relationships with consumers are rare. Most emotional attachments are withdrawn once the honeymoon period draws to a close. This is largely because the evolution that takes place is grossly polarized, occurring almost exclusively within the user.

In the made world, a relentless cycle of desire and disappointment is in progress. Products once loved and cherished by users fall out of favour with surprising regularity. As mentioned earlier, in most cases the withdrawal of emotional attachment and subsequent loss of empathy are caused by a noticeable discrepancy between actual and imagined realities. There has always been a gap between our actual state and our desired state; this is a natural human condition. However, the size of the gap between these two poles has never been as wide as it is today.

Consumers like to believe that this will be the last toaster they will ever need or that a Dyson vacuum cleaner is going to put the oomph back into the daily grind we call life. Expectations are, therefore, unreasonably high, making the transition from honeymoon to daily life a harsh smack down to Earth. Users characterize this moment as disappointment, although, to be accurate, the real problem lies in the overly optimistic expectations of each user, while marketers exacerbate the imbalance further. Products make claims that are hard to back up, promising the world to consumers from the safety of the shop window, bombarding them with a loud and colourful array of false claims.

Although short-term economic edge may be acquired via this strategy, excessively raising expectations simply increases the likelihood of disappointment, sealing the inevitable fate of this future trash. Consumers acclimatize to stimulation quickly and demands subsequently increase. New situations quickly lose their sense of novelty as we adapt to them; whether acclimatizing to the muggy humidity of Taipei, the frenzied busyness of Tokyo or the serene tranquillity of the English Lake District, normalcy slowly erodes away the jagged edges of newness, transforming unfamiliar sensations into known and familiar ones.

## **Growing together**

Most products within the current model of design are static, possessing non-evolutionary souls; we as users, on the other hand, are anything but static and exist within a restless state of continual adaptation and growth. The problems arising from this restlessness are also evident within the sustainability of inter-human relations,

## ATTACHMENTS TO OBJECTS

as synchronizing both the rate and nature of this constant evolutionary change is practically impossible; anomalies emerge between two previously well-synchronized people, and tension normally follows.

Most marriage guidance counsellors will confirm that poorly synchronized growth can lead to marital difficulties. One partner may outgrow the other, and soon they begin to feel as though they are somehow being held back. More often than not, both partners grow and evolve

but in radically different directions, often causing incompatibility, conflict and the eventual degeneration of empathy. Comfort

*We dream of more desirable futures, with newer and younger models.*

may be sought in material consumption, as

it is always us who outgrows, us who evolves, us who decides when enough is enough. Though it is not necessarily a good thing, some people clearly find the company of electronic products more satisfying than that of people.<sup>28</sup> In the material world, when the adoration and empathy fades – as it almost always does – the original pair bond weakens and fresh bonding urges are motivated. The consumer's eye begins to wander, dreaming of more desirable futures with newer models. Relationships at this juncture are quickly superseded, and due to the lack of empathy between subject and object, replacement occurs with the greatest of ease.

The throughput of material and energy required to support this pattern of 'adulterous consumption'<sup>29</sup> is catastrophic in proportion, causing great devastation to the natural world. In contrast, it appears feasible that a relationship characterized by well-synchronized mutual evolution might assist in carrying subject-object partnerships beyond their passionate early stages. Inter-human relationships frequently break down as a result of understimulation experienced by either both or one of the two parties. An incompatibility of pace and direction of individual evolution is experienced, inducing sensations of frustration that create distance between partners.

When discussing the longevity of emotional attachment, relationship counsellor John Gray – author of the international best seller *Men Are from Mars, Women Are from Venus* – describes relationships as sporadic, deeply confusing and somewhat irregular: 'It is very common for two people who are madly in love one day to hate each other or fight the very next day. These sudden shifts are confusing; yet they are common.'<sup>30</sup> Gray claims that these peaks and troughs are the result of unresolved emotions lurking deep in the subconscious mind, and when we feel empathy – or love – we tend to relax. It is at the moment of relaxation that the unresolved



**Figure 3.3**

**Tripp Trapp ®**

*The beechwood Tripp Trapp has a seat and footrest that can be adjusted in both height and depth, making it possible to adapt the chair to a child as it grows.*

Source: Peter Opsvik, Stokke AS, 1972

Photograph by Peder Otto Dybvik

## ATTACHMENTS TO OBJECTS

emotions feel it is safe to come to the surface. 'It is as though your unresolved feelings wait until you are feeling loved, and then they come up to be healed.'<sup>31</sup> Pretty soon we begin to feel irritable, critical and resentful of our partners, blaming them for these unwanted emotions that seem to come from nowhere. Feelings such as these are not only triggered by love but can also be the consequence of other intense emotional events in life, such as Christmas, birthdays or the New Year.

### Love

To speak of love as existing within the material domain conjures notions of obscurity and fanaticism. Despite this, it cannot be ignored that the emotional instability of humans provides a wild card element to the development of attachments with objects. Furthermore, it appears clear that the human development of empathic relationships with objects is powerfully influenced by this characteristic instability. Designers must learn to embrace human unpredictability before they can attempt to effectively enrich and elongate subject-object engagement.

Love interlaces the material fabric of one's life; whether it is the love of a Renaissance painting, stewed apples and custard, an album reminiscent of old friends or even your new kitchen knife, love abounds in both the made and unmade worlds. Designer Tony Brook discusses a growing affection for his newfound friend, the G5 Mac. He states:

I'm not madly geeky as far as kit goes. Admittedly, I was thrilled with the Cinema Display and seduced by the ubiquitous iPod (full fat, not the wussy pastel iPod Lite). But my new G5 is a thing of rare beauty. It positively radiates. I have to confess to stroking it, though I haven't patted or talked to it, yet.<sup>32</sup>

The love that users develop for manufactured objects may not be the stuff of Mills and Boon; first, it lacks the two-way emotional exchange upon which love so desperately feeds, and second, it is a love incapable of mutual evolution and growth. The life expectancy of the love established between people and things is therefore limited and ordinarily fades once the gloss of newness has worn away. Indeed, the love between subject and object is oftentimes transient and is seldom eternal; then again,

*Affection can fade as the gloss of newness wears away.*

the same may be said of inter-human relations, which often portray equal degrees of instability and fragility that are not altogether different.

Occasionally, humans and objects hit it off to surprising degrees; as if by accident, strong empathic bonds are formed between subject and object, forging practically inseparable unions. One notable example is an Australian man who felt such strong empathic bonds with his TV set that he actually married it:

During the ceremony, he placed a gold wedding ring on top of the TV set and one on his finger. He even promised to 'love, honour, and obey' the product. One day it just occurred to him that his TV was the best companion he had ever had – he watched up to ten hours a day.<sup>33</sup>

This is, of course, a somewhat exceptional occurrence; however, our Aussie friend simply takes a common behavioural phenomenon one step further – or perhaps two steps? Most people will admit to spending too much time in front of the box, on the phone or plonked before a computer roaming the online space. Indeed, manufactured artefacts frequently receive the lion's

*We spend the vast majority of our time interacting with manufactured objects.*

share of our free time, often taking precedence over people in the battle for attention. Custom car enthusiasts often claim to spend more time with their automobile than with their immediate family. Despite the peculiarity of these anecdotes, they indicate that increased subject-object empathy has the potential to considerably elongate honeymoon periods in rich and emotionally resonant ways.

### A streamlined world

Amid the monotony of today's overstreamlined world, most consumer products are not designed to facilitate any great intensities of interaction; in consequence, the range of experiences delivered by artefacts born of this mindset are both restricted and short-lived. Since the end of the last century, users have found themselves increasingly sequestered from meaningful material engagements, unwittingly relegated to the role of button pushers – a passive audience who simply presses go, then stands back to watch as anonymous black boxes perform their magic. It may, therefore, be asserted that in terms of facilitating emotional attachment between users and objects, the current model of design is on an entirely different page.

## ATTACHMENTS TO OBJECTS

Caroline Hummels of the Department of Industrial Design at Delft University of Technology expresses concern over the increasingly anonymous and experience-impoverished direction in which design appears to be currently heading. She draws our attention to this by recounting the rich emotional experience of interacting with an old record player:

I cautiously removed the precious gramophone record from its cover and placed it on the turntable. With the no-static brush I carefully removed the hardly visible dust particles. I lifted up the arm, gently blew a bit of fluff from the needle and moved it smoothly above the record. After a last check, I carefully placed the needle in the groove. A soft tick, a cracking noise, and a few seconds later the beautiful voice of Mathilde Santing filled the room.<sup>34</sup>

To those of us familiar with the experience of laying down vinyl, the degree of care, focus and overall emotional involvement that this delicate process commands is considerable. In contrast, most of us are also familiar with the comparatively sterile mode of engagement commanded by more recent forms of audio – cassette, CD, MP3, etc. – each of which may be viewed as an epoch-making development in acoustic innovation but a significant step backwards in terms of the richness in emotional experience. Hummels further points out that 'the voice of Santing is now written on a silver disc, which is tucked inside a black box with several anonymous buttons'.<sup>35</sup> So often we see the endeavours of technological innovation deployed to hasten the process of interaction and remove the decision-making process from increasingly alienated users.

Streamlined efficiency need not be at odds with rich interactive experiences, and the products we create to manifest emergent technologies need to embrace this ideology. This commercial model represents 'just one approach to product design, one genre, if you like, which offers a very limited experience. Like a Hollywood movie the emphasis is on easy pleasure and conformist values.'<sup>36</sup> Alternative product genres could emerge: genres that challenge, provoke and force cognitive enquiry; genres that sustain attachment by enabling layer upon layer of empathy to form, while providing the user with an endless profundity of rich and varied experience:

Products could offer more complex and demanding aesthetic experiences if designers referred to this bizarre world of the 'infra-ordinary', where stories show that truth is

indeed stranger than fiction, and prove that our experience of everyday life lived through conventional electronic products is aesthetically impoverished.<sup>37</sup>

## Designing dependency

Dependency is frequently spoken of as an abnormal degree of reliance on something that is psychologically or physically habit-forming, such as coffee, chocolate, alcohol or narcotics. We may also hear dependency spoken of as a lack of independence or self-sufficiency where specific needs are fulfilled through a reliance on other people or things, including a dependency on, for example, central heating, public transport, the National Health Service, parents or a best friend. More interestingly, dependencies commonly exist of which most of us are not consciously aware, such as our constant dependency on the Earth to sustain its gravitational pull or on the ability of our bodies to maintain a healthy pH balance. These rudimentary dependencies are of particular interest as they serve to remind us that we are never completely in control of our lives, much as we would like to believe that we are. Finally, there is a flip side to dependency in which we are the entity being depended upon. In contrast to the aforementioned outgoing dependencies, this alternative rendering of incoming dependency may be likened to the needy reliance underpinning the affection received by a master from their dog. It is this dependency and neediness that often bridges the void between otherwise separate entities to create a relationship, founded on the symbiotic exchange of reliance and need.

The importance of this point cannot be overemphasized, particularly in the context of subject-object relationships. Everyday objects that engage the senses in this way should not be taken for granted;

their characteristics are not simply utilitarian or aesthetic. They invade our lives and literally depend upon our care and attention in order to survive. It is this codependency

*Everyday objects that engage the senses invade the experiential fabric of our lives.*

that gives rise to deep sensations of cohesion and attachment. Most physical experiences create a modest sense of dependency as they depend upon our care to survive. Even the most commonplace of products are dependent in some way or another – be it a mobile phone's dependency on recharging, a car's continual need for maintenance, a suede bag's protection from the weather or simply a paintbrush's yearning to be used, enabling its purpose to be fulfilled. Baseline levels of dependency such as these are so common that most users are unaware of them. They

## ATTACHMENTS TO OBJECTS

therefore go largely unnoticed, transforming subject-object relations into the non-synergistic and ordinarily fugacious sequence of interactions so characteristic of modern times.

### Feedforward and inherent feedback

One method for designing emotionally rich interactions can be drawn from feed-forward and inherent feedback; the term 'inherent' is crucial here as it denotes relatedness to the initial input or feedforward: 'With feed-forward, we mean communication of the purpose of an action ... [w]ith inherent feedback we try to strengthen the coupling between the action and the feedback.'<sup>38</sup> Most people are quite comfortable in their understanding of conventional feedforward and feedback; 'sending back to the user information about what action has actually been done, what result has been accomplished ... is a well-known concept in the science of control and information theory'.<sup>39</sup> However, in contrast to conventional feedforward and feedback methodologies, inherent feedback must reflect the nuances and subtle ambiguities of feedforward. The car horn is a great example of how not to do this. A car pulls out in front of you, almost causing an accident, and you slam the palm of your hand down on the horn. The horn blares. Pulling up outside your grandmother's flat to take her to bingo, you gently tap the horn with your index finger. The horn blares. In these dissimilar contexts we see two radically different manners of feedforward. The first is intended to be aggressive and scolding, whereas the second is meant to be more of a chirpy greeting; yet the horn responds the same way in both cases. Although a direct link can be made between the feedforward – pushing a button – and the feedback – horn blaring – the specific nature of the car horn's feedback is not inherent.

This model of interaction is, indeed, the prevailing commercial norm, and can be found in most product scenarios where buttons, dials and switches are located. In this way, the on/off world of commercial goods possesses a banality that somehow transforms the rich wonder of material cul-

ture into mundane drudgery. Inherent feedback can help to reduce the experiential gap between subject and object and may, therefore, be seen as a primary agent of empathic engagement. 'Engagement is not just something that happens momentarily when we use something. It is also a relationship that has to grow over the years'.<sup>40</sup>

*In coming to know objects,  
boundaries between flesh and  
polymer disintegrate.*

When subject-object interactions develop this degree of intuition, the boundaries between flesh and polymer disintegrate to make way for new and provocative modes of material engagement. The black and white world of traditional interaction develops a shade of grey, situated in the fuzzy space between on and off, yes and no.

### Fuzzy interaction

Fuzzy interaction reintroduces the wildcard element of unpredictability to otherwise traditional interaction scenarios; the overall result is less precise outcomes and richer user experiences. The ideology of fuzzy interactions with objects runs contrary to the prevailing model of popular design, with its focus on idiot-proof user interfaces.

*Imperfections can be  
endearing.*

However, we should not recoil back from less precise models of material engagement simply because they differ from the norm. In many cases, 'imperfections can be endearing and help to create a bond with the user'.<sup>41</sup> It may be, after all, that the brutal discarding of fully functional products is actually catalyzed by excessive usability, which leads to the exclusion of error and accidental discoveries; it is quite possible that products designed in this way are simply too predictable and, thus, are incapable of holding our interest over any great length of time.

Fuzzy interfaces present users with complex, artful scenarios that must be learned and mastered – a novel departure from the unconsciously simple, spoon-fed manner to which interface design has become accustomed toward a craft-like engagement in which the skill and mastery of an object must be acquired slowly, over time. Another advantage of fuzzy interactions is that they slow us down, creating what Ezio Manzini refers to as 'islands of slowness'<sup>42</sup> that allow us to think, experience and re-evaluate our assumptions about the way things are in this ever-changing world.

*We need to create 'islands of slowness'.*

*Fuzzy interfaces present complex scenarios that must be mastered over time.*

In recent times, pace has become a measure of progress; today, the pace of life has surpassed the cognitive capabilities of the human brain, forcing us to differentiate between the things we want to think about and the things we do not. In

## ATTACHMENTS TO OBJECTS

other words, there is more information out there than we have time to process and, therefore, we must be selective; we stop thinking about certain things – things that we deem unimportant.

### Pace

Many interaction designers are beginning to suspect that as pace increases, experience decreases. Although this may not be true in the case of a roller coaster ride or a bungee jump, it does illustrate that the length of the overall interactive engagement should be drawn out in order to maximize the resulting experience. 'Some products allow the user's perception of them to change over time, either by a certain richness of detail or by slowly unfolding thus displaying more sides of their personalities. They reveal their layers like an onion.'<sup>43</sup> Indeed, the experience provided by a roller coaster is largely speed oriented; however, without the lengthy queuing period and the slow ascent up to the ride's highest point, the experience would surely be less rich.

*The slow ascent to a roller coaster's highest point makes the experience richer.*

It was discussed earlier in this book that one of the fundamental problems underpinning the consumption and waste of natural resources is that consumers continually evolve, whereas products are frozen in time. Inherent feedback and feedforward, fuzzy interactions and attention to pace assist in destabilizing this one-way process by encouraging users to re-evaluate the relationship and subconsciously update their feelings toward a given object. The relationship between subject and object becomes evolutionary as the subtle exchange of feedforward and inherent feedback creates a sense of growth, newness and change.

Of course, fuzzy interaction is not for everyone, nor is it universally applicable. Not all consumers want to spend ten months learning how to correctly operate their dishwasher, nor would customers be too thrilled if a cash machine issued only what it felt you could afford at that particular time. Nevertheless, alternative modes of interaction serve to remind us that perhaps the streamlining endeavours of modern times have inadvertently stripped the charm, mystery and wonder out of everyday material encounters.

*We inadvertently stripped the charm and mystery from our material encounters.*



**Figure 3.4**

**365 knitting clock**

*This clock demonstrates the passage of time by mechanically knitting a scarf throughout the year, creating a unique piece of apparel at the end of the process.*

Source: Siren Elise Wilhelmsen, 2012

Photographs by Siren Elise Wilhelmsen

## ATTACHMENTS TO OBJECTS

Of course, the design business is steadily shifting its perception of sustainability, moving from risk to opportunity, from mere compliance to a leadership issue.<sup>44</sup> These weak signals indicate a departure from the tired doom-and-gloom rhetoric of sustainability discourse, to reveal a more optimistic, inspirational and creative vision that places sustainability and innovation side by side.

The well-intentioned call of sustainable design can be prescriptive, whereas people – generally speaking – do not like being told what to do. It therefore appears clear that imposing the rigid principles of sustainability upon the creative professions in a top-down approach will only serve to stunt creativity by threatening the ‘blue sky ideology’ that creative practitioners hold so very dear: ‘not everyone feels the call to create water-pumps or utility vehicles for local people in Africa, to design wheel-chairs and other useful devices or to conceive environmentally friendly products on the basis of detailed lifecycle analyses’.<sup>45</sup>

It is vital that we revisit the methods through which we discuss sustainability and the way in which it is shared, discussed and implemented within creative practice. Essentially, change will not be brought about through telling people what they can and cannot do; the likelihood of change will only occur when alternatives emerge that propose a more attractive solution than the one currently adopted.

# chapter

# four

authors

of

experience

*Products shape experience, and designers influence the character of these experiences in powerful ways; we are creators of experiences, not simply of objects.*

## User experience

Whether designed that way or not, users invariably have some experience of a manufactured object. Just as we might unwittingly experience a tranquil sunset, the stench of an old wet dog or perhaps a knock at the door in the early hours of the morning, experience may be drawn from all facets of life, and to varying degrees. It is common to hear of user experiences defined in terms of their intensity or power; yet to measure experience in this way is actually counterproductive in a number of instances. It is the subtle and more ephemeral user experiences that penetrate the psyche through the slow and steady passing of time.

Intense user experiences, such as those gained from igniting a firework, or achieving 0 to 60 miles per hour in less than four seconds, for example, are indeed powerful; yet they are fleeting and are seldom revisited by users. In contrast to this,

## AUTHORS OF EXPERIENCE

subtle and more ephemeral user experiences, such as those gained from gently refilling a fountain pen with ink, or perhaps re-honing the blade of a sushi knife on a well-worn whet stone, will be revisited time and time again, as with each visit the experience grows and evolves a little further. Therefore, measuring experiences in terms of their apparent intensity is unhelpful as it fails to designate the long-term efficacy – and potential durability – of the experience itself.

Perhaps the majority of user experiences are never even consciously realized; they are perceived only within deeper levels of mental processing that, over time, forge meaningful associations with a given product, material or experience. Insignificant as they may at first seem, these subconscious experiences may be the most potent and influential of all. They establish strong and durable connections within users on both rational and emotional levels.

*To measure experience in terms of intensity is counterproductive.*

This point may be exemplified by examining the experience of serving salad from a white ceramic bowl as opposed to one made from reconstituted wood; although both bowls do the same thing – serve salad – the interactive experiences they provide differ greatly. The ceramic bowl resonates sharply on contact with the serving utensil, and the zesty hues of the salad are contrasted against the pure white of the ceramic, while the innate perception held by each of us of ceramic as being a pure and precise, and somehow timeless, material embellishes the experience further still. The glazed surface of the ceramic feels cold to the touch, slowly drawing heat from the hand on contact, while reflecting subtle nuances of the salad's colour and shape through the same lustrous, mirror-like surface.

Now take the bowl made from reconstituted wood. Its walls are thicker than those of the ceramic bowl; yet the lower material density also provides a lower overall weight. Due to its non-uniform matrices of wood fragments, the acoustics of this low-density material possess numbness, a softness that engenders the object with a sense of calm. Whether reconstituted or not, wood maintains an ambient temperature that makes it barely discernible to touch. Both the unsystematic undulating surface texture and myriad patterns formed by the wood particles jostling for position in the moulding process adorn each bowl with a degree of idiosyncrasy and uniqueness. It is fairly common to observe

*Chance happenings occur during production, which can elevate objects.*

consumers comparing four or five such bowls like-for-like on the shop floor to find the one with the boldest markings or the richest array of contrasting woody colours, or simply in search of one that stands out in some way. Glorious chance happenings occur during production, which bring their own value to the final piece. Knotty pieces of wood appear in unusual places, or maybe a single oversized wood chip finds its way triumphantly into the mould, elevating the object beyond the anonymous world of mass manufacturing.

These user experiences only lightly scratch the surface of a sensorial deconstruction of an object that could conceivably run on for several pages; we have not even begun to discuss the more fundamental considerations such as shape, size and proportion. The point to be made here is that when scrutinized in isolation, these experiences may initially appear somewhat

insignificant – perhaps even banal – but when perceived in their entirety, they pull together to construct an aggregate user experience that is both meaningful and

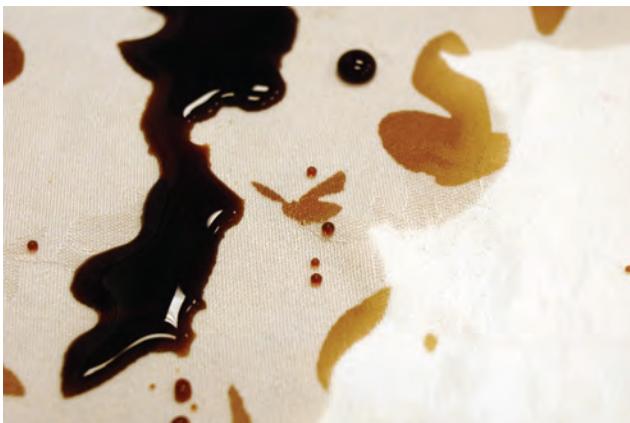
*Profound experience can be elicited through the most commonplace of objects.*

often long-lasting. With this in mind, it becomes apparent that any object (no matter how mundane or commonplace) is capable of eliciting intense arrays of experience within users, and that each design decision (no matter how small) is wholly influential over the way in which users perceive these experiences.

Many experiences cannot be planned, or designed, such as the experience of falling in love, being overwhelmed by extreme boredom or just simply experiencing the blissful afterglow that follows a fine meal. Life is filled with experiences, all of which may be described as meaningful as they empower us to formulate conceptual frameworks of reference that serve to rationalize the complex world in which we live. Experience designer Nathan Shedroff claims that:

While everything, technically, is an experience of some sort, there is something important and special to many experiences that make them worth discussing. In particular, the elements that contribute to superior experiences are knowable and reproducible, which make them designable.<sup>1</sup>

Despite their capricious instability, all experiences can indeed be rationalized, understood and learned from in some way. This process of critical observation is fundamental to design as it provides a rich source from which we may gain insight into the



**Figure 4.1**  
**Underfull**  
**tablecloth**

*This tablecloth turns accidents into a positive experiences, and memories, while cleverly avoiding the use of energy-intensive laundering and toxic detergents.*

Source: Kristine Bjaadal,  
2010

Photographs by Kristine  
Bjaadal

way in which we live and the separate elements that make the process of living both meaningful and experientially rich.

### **Naughty, naughty**

We occasionally see a flip side to user experience, particularly when products are broken or, even more so, when they appear functional but actually are not. Stations in the London Underground are great places to observe this kind of user experience in action; the degree of hatred and rage displaced upon the dysfunctional ticket machines is often remarkable and, indeed, very real, and the fact that money is involved simply amplifies an already intense situation. Interestingly, a point is reached after the 'reject coin' knob has been poked and prodded in every conceivable way when users will begin striking the offending machine, optimistically checking the coin dispenser in the silence separating each barrage of blows. Remarkably, the beating continues, but the money checking stops; then a concluding spurt of punches is thrown as unadulterated punishment to the infuriating contraption before the user finally admits defeat.

Although examples do exist, we seldom witness users affectionately stroking and caressing machines after they perform well; most users, however, are prepared to invest an enormous degree of emotional outlay in dysfunctional objects, such as physically assaulting a broken ticket machine, pressing the buttons irrationally hard on a remote control with duff batteries or clicking a desktop icon an eleventh time because nothing happened the previous ten. These phenomena are demonstrative of the level of influence that manufactured objects have over our day-to-day well-being, while also illustrating that it often is not until something misbehaves that it actually gets noticed. This is, in part, due to the streamlining endeavours of mainstream material culture; interaction has become an unconscious process that we are barely even conscious of until, that is, the object misbehaves.

It is worth noting that 'moderate arousal can focus attention and enhance performance, while extreme arousal in the form of tension or anxiety can interfere with performance'.<sup>2</sup> If an object excessively arouses the user, their ability to interact coherently with it deteriorates quickly. The experiences delivered by objects of this

*Dysfunctional products attract attention, at times excessively.*

*If objects excessively arouse the user, the quality of interaction deteriorates.*

nature can be so intense that they begin to conflict with basic usability, transforming interaction into a maddening sequence of failed attempts and misinterpreted cues. A balance is therefore required which synchronizes optimal degrees of emotional arousal with a consistent measure of usability and performance, enabling the experience of emotional arousal without compromising the fluidity of elementary interaction between the subject and the object.

We speak of eating and diet in terms of moderation and strive to establish a healthy balance between work, rest and play; we take the rough with the smooth when it comes to the ups and downs of an intimate relationship; and we are all familiar with the dualistic rhythm of night and day, which is contained within the broader annual cycles of hot and cold weather that come with the changing seasons. These natural principles go out the window when it comes to the consumption of material objects; it is as though the artefacts of material culture provide a respite from the emotional complexities of the world outside – a safe place where satisfaction is guaranteed, or your money back.

Some researchers are beginning to suspect that this manner of engagement with our material world is actually counterproductive, being largely responsible for the degree of disappointment and waste so prevalent today. Over the past few decades, consumer culture has lost its balance, grossly polarizing itself toward the happy-ever-after end of the scale – the end where all is sunny, carefree and non-problematic. This is hardly surprising, really. If given the choice of having a stress-free working day full of exhilaration and delight or enduring an agonizing 14-hour serving of desolation and woe, which would you choose?

Our expectations of material objects have become so unrealistically high that disappointment is the only inevitable outcome of continued interaction. According to Yin and Yang, material culture has lost its balance and therefore must be swung away from convenience and servitude where it now lies, back toward the labour intensive and temperamental. Once the conceptual balance is restored, it becomes possible to foresee objects with a naughty, cheeky side to their personality: objects that have sudden mood swings, get sick, go through dysfunctional puberties, get bored or just simply misbehave from time to time. Enhanced degrees of autonomy such as this would certainly provide a more balanced and less dictatorial mode of subject-object engagement, along with a far richer and more diverse array of experiences for the average user.



**Figure 4.2**  
**Shelves for life**  
These shelves will colour  
and the surfaces will  
mark and stain over the  
years. When you die, they  
can be reassembled as a  
coffin.

Source: William Warren, 2005  
Photographs by William Warren



## AUTHORS OF EXPERIENCE

However, designing contemporary genres of emotionally demanding objects that do nothing but provoke and antagonize their users may not be the most effective approach to optimizing product longevity. In some cases, products born of this mindset may actually find themselves being booted out simply for being too high maintenance and, thus, a permanent source of irritation. Most users do not have the time – or the inclination – to train their alarm clock how to tell the time, clean up after their stereo or traipse the dark streets and alleyways in search of the pubescent vacuum cleaner that stormed out of the house earlier that day. This degree of emotional demand would most likely lead to annoyance on the part of users, and it would be pretty naive to assume that consumers are currently within range of such an intense form of user experience.

Nevertheless, a greater degree of emotional resonance and symbolic exchange between users and objects would elevate interaction beyond its current state. This may be easier than it appears, as ‘wherever objects take part in practices of symbolic exchange, they gain new significance in accordance with the emotions involved in the exchange relation’.<sup>3</sup> Provided that objects are designed with a sufficient degree of openness, they will provide vehicles for this symbolic exchange to occur and, in so doing, will incrementally grow and evolve in the eyes of the user as they continually take on new significance and meaning. As the user evolves and grows, so too does the object. It is therefore essential to avoid the notion of industrial design objects as static in meaning and appreciate that, like paintings and literary works, their meanings evolve over time.<sup>4</sup>

The designing of user experiences is in danger of becoming a secondary bolt-on: a novel set of considerations, waiting patiently in line behind the seemingly *real* design fundamentals, such as ergonomics, material specification, tooling and the like – all of which make major contributions to the overall user experience, but wrongfully claim dominance over less operational and more poetic design methodologies.

In today’s task-oriented and production-centred world, it might be argued that both the ideology and value of user experience has gone somewhat awry. That

*Most users lack the inclination to train their clock to tell the time.*

*How can we have greater emotional and symbolic exchanges with our stuff?*

*Like paintings and literary works, object meaning evolves over time.*

is not to say that consumer culture is a barren wasteland devoid of experience. Rather, interacting within today's technocratic world of goods can be somewhat underwhelming, despite the number of functions jammed into a single given object.

Although laced with a nostalgic charm when viewed with hindsight, this manner of creative methodology might best be described as a Swiss Army Knife approach to design: cramming in functions – often at the expense of usability – in an attempt to engender more meaning and offer greater value for money than the competitor's rival product. The Swiss Army Knife approach to design and production is certainly not confined to product design and has found its way into most aspects of consumer culture. Ordering of a cup of coffee in Starbucks unveils an absolute minefield of choices, options and variations of the hot beverage theme – from your size requirements to your milk ethics – that somehow detract from the simple desired experience of going out and slurping on a cup of the black stuff. Some would argue that these options are merely symptomatic of a postmodern culture in which choice – or the illusion of choice – is paramount to the consumer's sense of well-being. It can, however, be overwhelming, and having successfully navigated your way through this bewildering ordering process and found a seat, the taste and quality of the coffee seems somehow unimportant. The point here is that although choice is both a relevant issue and a necessary consideration in most areas of production and consumption, it must be managed with care and sensitivity; otherwise, it will completely dominate the interaction and, in so doing, detract from the experience of engaging in a simple, immersive process.

### **Authoring experience**

So we design experiences, and not products as empty shells of cold utility. It would be ridiculous to assume, however, that material culture was somehow devoid of rich user experiences prior to the advent of such consideration. Indeed, 'the design of experiences isn't any newer than the recognition of experiences'.<sup>5</sup>

*The design of experiences isn't any newer than the recognition of experiences.*

Experience design does not simply confine itself to the fields of digital media and human-computer interaction (HCI). 'Experience design is an emerging paradigm, a call for inclusion: it calls for an integrative practice of design that can benefit all designers'.<sup>6</sup> Indeed, the work of experience designers has tended to centre itself within the digital sphere and continues to do

## AUTHORS OF EXPERIENCE

so to this day; however, the discipline's potential stretches far beyond the design of online media:

Designers who work in the physical world of themed products and environments have a vastly more developed theoretical base they can call on than do designers who work in the online world. While the latter have recently gotten the most ink, a lot more money and labour goes into the design of tangible objects and places intended to engender experiences. Designers in the physical world also have developed rigorous project-management and client-service skills, as well as a heightened ability to work with cross-disciplinary teams. Comparable skills and methods are not prolific among online designers.<sup>7</sup>

User experience has always been an important design consideration, yet, regrettably, this is a consideration rarely applied to mundane everyday genres of objects; this is most likely why they are still described as being mundane and everyday. A website, for example, will receive a great deal of attention from experience designers, whereas objects such as wash basins, toilet seats and ironing boards – which cater for equally commonplace user experiences – may receive little or no consideration at all in terms of user experience. The most important concept to grasp is that 'all experiences are important and that we can learn from them, whether they are traditional, physical, offline experiences or whether they are digital, online or other technological experiences'.<sup>8</sup>

*All experiences are important and we can learn from them.*

As an area of creative practice, experience design might best be described as a synthesis of contemporary design disciplines that, when interlaced, facilitate the generation of creative solutions to a broad range of modern-day problems. One of the key strengths of this new branch of design lies in its interdisciplinary nature. By cross-pollinating previously isolated disciplines, experience design manages to pioneer alternative and revealing possibilities for the future. According to the American Institute of Graphic Arts (AIGA), experience design is 'a different approach to design that has wider boundaries than traditional design and that strives for creating experiences beyond just products or services'.<sup>9</sup> Although constructed on a foundation of traditional design principles, experience design transcends them and, in so doing, is empowered to take a more holistic approach to the creation of product lifecycles, attending not only to the creation of durable, mass-manufactured

objects and experiences, but also to the engendering of perceptibly individualistic user experiences. AIGA have found that this level of subject-object intimacy may be further engendered by 'creating a relationship with individuals, not targeting a mass market'.<sup>10</sup> Products may leave the factory floor in the tens of thousands; however, the experiences that users glean from them are both unique and, quite notably, idiosyncratic. This puts forward a more empathic approach by proposing emergent consumer futures that facilitate the satisfaction of commercial, societal and individual needs. It is a qualitative process that encompasses the planning, research, conceptualization, design and development of a vast array of user-centric objects and experiences. It is unfortunate that

the intense time and project pressures faced by designers in all disciplines, together with a parochialism that is disturbingly constant among designers, prevents interdisciplinary conversations. Web designers are too busy to talk to architects, who are too busy to talk to graphic designers, who are too busy to talk to automotive designers and so on.<sup>11</sup>

A more ecumenical approach would encourage greater diversity and pluralism within the creative industry, smashing down the walls of distinction that currently sequester design disciplines from one another to unveil a wider and more collaborative creative culture.

If we are to cultivate the required conditions for deep sustainable change, we must identify and overcome the frameworks that inhibit progress. We must move toward a metadisciplinary space that includes – yet goes beyond – the disciplines to enable a more ecological approach to design, primarily through lifting the restrictive language and culture of disciplinarity which so frequently serves to divide and separate, rather than focus and enhance. Just like the 200-hectare wheat field, with biodiversity poisoned out of its system in the name of productivity, a studio stuffed with interior designers and nothing else may lead to an equally hermetic space of a similarly barren and isolated nature.

*We must identify and overcome the frameworks that inhibit progress.*

Positive development must be founded on flux, combination, exposure, adaptation, reaction, difference and emergence – a melting together of things and a rewilding of design. In this way, practice relocates to the edges and the borderlands where

## AUTHORS OF EXPERIENCE

disciplines, environments, paradigms and world views connect and collide, taking us toward the next stage in the debate where we free ourselves of artificially separated disciplinary cells to participate within a more expansive, synergistic and holistic culture of engagement with the sustainability agenda; taking us toward a more ecological model and approach where people are valued as individuals with skills, passions, abilities and drive rather than just representatives of a particular discipline. The reductive and grossly outmoded notion of the specialist, who deals only in parts, is rejected.

*We must free ourselves of artificially separated disciplinary silos.*

In a post-awareness-raising era, we must awaken from the 100-year spell of a machine-like reality – which promoted fragmentation in our thinking and perception and is inadequate for addressing the complex, interconnected problems of the current age – to reengage the plastic nature of perception and to steer our collective gaze toward a more holistic, expansive vision of an ecological future.

When we consider the design of experience, we find ourselves exploring diverse and frequently abstract territories that are not ordinarily associated with commercial design practice and processes. For example, theatre, dance and performance may be used as tools to assist communication with clients, enabling ideas and concepts to be mediated through dramatic, yet readily cognizable, means. Storytelling also plays a large part in the mediation of complex narratives and may be deployed by experience designers and information architects as a means of organizing and rationalizing complex assemblages of data.

*Storytelling also plays a large part in the mediation of complex narratives.*

In commercial terms, user experience could be defined as 'the perception resulting from the experiences a person has with a company, its products and its services at every point where that company touches their lives'.<sup>12</sup> This indicates that the experience delivered by a product may not be fully distinguished from that of the brand and its own complex array of values and associations – a phenomenon that adds yet another bewildering layer of complexity to the process of planning rich user experiences. For example, the experience of drinking Coke's new line of bottled water is tainted by our overall associations with

*User experience is a slippery, complex assemblage of interlinked phenomena.*

the brand; similarly, a Caesar salad from McDonald's seems somehow less nutritious than one bought from the family-run deli next door.

### **Primitives in complexity**

As the made world continues to develop in technological and scientific complexity, it can be said that the human condition itself has changed relatively little. And so today we find ourselves as primitive beings,

transplanted into progressively more abstract and technologically complex environments that are beyond our 'nature' as a species. In terms of biological evolution, it

*We are primitive beings,  
transplanted in ever more  
complex environments.*

may be argued that we have come as far as we can usefully go, and if we intend to sustain progress, we must dramatically alter the parameters of life, through design. Whether faster processing speeds, taller structures, smarter textiles or smaller components, we must apply science, technology and design to realize our visions – whatever they may be – and make them livable.

Indeed, human nature itself has not really changed in any fundamentally meaningful way over time, despite the myriad advances in our capabilities as a species since earlier and more primitive times. Yet the notion of 'the primitive' is problematic; its connotations are almost always associated with negative things. Whether we are describing one's taste in music, mental capacity, talents, skills or ideas, 'primitive' is universally derogatory in our contemporary understanding. In contrast, one could argue that a primitive tribal shaman has the same amount of knowledge, if not more so, than a Western doctor – it is just a different form of knowledge.

While some aspects of our everyday lives have become staggeringly complex and overwhelming, others have become experientially impoverished and banal. In a hunter-gatherer society, for example, most members know most of what the entire group knows and can also take care of themselves (the load is evenly distributed across the community, and their interests). In today's developed world, however, people tend to know a lot about some narrow niches and are almost totally ignorant about most of the rest. We thus have a highly fragmented and mechanistic view of reality as opposed to an integrated, whole and ecological one.

When compared to the daily challenges facing early hunter-gatherers, for example, our streamlined modern lives are not all that complex. To realize this, simply walk to your refrigerator, open the door and take out a ready-made meal, put it in

## AUTHORS OF EXPERIENCE

the microwave for 2 minutes and 30 seconds, sit down and eat. This is a far cry from the deep complexity involved in gathering food, encountered on a daily basis by our early ancestors – studying local wisdom for years to be able to know when, where and how to keep yourself and your community nourished at any given time of year. Of course, the economic systems that bring the refrigerator into being are highly complex, as are those that keep the electricity coursing through its manufactured veins. However, this complexity is seldom revealed to us. Instead, it is concealed, and distributed across a vast and highly decentralized system – a system populated by many specialists who each tackle small parts, or nodes, of the system's total complexity. In this way, you are not necessarily complex or of a higher intelligence, but simply part of a complex society, system or structure.

As the wires get hidden away, devices become smaller and interaction becomes an ever more intuitive process, one might assume that the complexity of the made world is on the drop. Many brands are now making design decisions on which part of the *story of technology* they want their customers to know about. This approach to object creation is intended to minimize value-destroying complexity and celebrate value-adding complexity.

So, the complexity is still there – we are simply screened from much of it; a veil is drawn across the mind-boggling scale of complexity that underpins the majority of electronically mediated life today. As primitives within complexity, this veil can, at times, be beneficial, shielding us from the enormity of what goes on behind the curtain. However, it can also serve to strip away the richness of interactive material experience that we as primitive beings crave.

Anthony Dunne describes how contemporary design is not engaging with the social, cultural and ethical implications of the technologies that it renders so attractive and desirable:

As our everyday social and cultural experiences are increasingly mediated by electronic products – from 'intelligent' toasters to iPods – it is the design of these products that shapes our experience of the 'electrosphere' in which we live.<sup>13</sup>

He laments mainstream industrial design's treatment of the electronic object in particular, relegating design to the status of a mere packager of technology and contriving families of virtually identical devices designed simply to communicate use, cultural meaning, and corporate identity through their surface.<sup>14</sup> He also questions the use of design's powerful visualization techniques to propagandize desires and needs

designed by others, thereby maintaining a society of passive consumers, unwittingly enslaved to a corporate vision of how life ought out to be lived.<sup>15</sup>

As Virilio argues, “[i]nteractive user-friendliness” . . . is just a metaphor for the subtle enslavement of the human being to “intelligent” machines.<sup>16</sup> According to Dunne:

the enslavement is not, strictly speaking, to machines, nor to people who build and own them, but to the conceptual models, values, and systems of thought the machines embody. . . . We unwittingly adopt roles created by the human factors specialists of large corporations.<sup>17</sup>

Streamlining and conformity are common traits among technologically advanced, complex societies. This is because random elements such as ill-fitting components in a machine or disobedient individuals in an otherwise conformist society are deeply disruptive. As such, these random elements are seen as rogues that challenge the integrity of the system as a whole and are, therefore, eradicated, aggressively if necessary. In fact, the most robust complex systems actually depend on individual elements being specialized, and conformist, to ensure fewer catastrophic outcomes.

Importantly, though, the term ‘complex’ is not used here to describe something that is necessarily *difficult* or that requires one to be *clever* to engage with it. Rather, it simply means that the more elements there are within a given system, the more complex the system becomes. Indeed, we have greater technological complexity today than we did in the time of our early *primitive* ancestors; however, this does not imply a greater human intelligence today.

### **Experience and emotion**

In today’s restless world of unceasing technological miniaturization, the need for objects capable of purveying potent emotional resonance is greater than ever. This is not to say that product miniaturization is necessarily commensurate with experience decline; rather, as the objects we deploy to designate our particular being reduce in size, their immaterial properties must expand in order to compensate for the lack of physical presence. Indeed,

issues of emotion, affective response and inclusive human concerns are exceedingly important in design. As people become more sensitive to dimensions of products that



**Figure 4.3**

**Twist my legs**

*The packaging imparts a red stain on a child's hands so that when the stool is assembled there is a permanent record of when and who made it.*

Source: Sam Stanistreet, 2013

Photographs by Sam  
Stanistreet



go beyond traditional aspects of usability, the need to understand and create emotional and aesthetic resonance between people and products increases.<sup>18</sup>

The role of emotion in design is of mounting importance. Having established itself as a core element of design discourse within the latter part of the twentieth century, emotion continues to adopt an ever more prominent position within contemporary design debate today. Of course, emotion has always played an important part in design and creation, both from the creator's perspective and from that of the end user. Since the beginning, the process of designing has been firmly rooted within emotional terms and taxonomies; the language that designers deploy to describe objects frequently ventures into emotional accounts of how they make us feel, what they remind us of or what personae the objects seem to portray.

Users will powerfully associate emotional characteristics with the slightest and most subtle of visual cues; colours play a large part in emotional attribution, with a range of hot pinks being described in terms ranging from sullen and melancholy to joyous and even lustful, while deep purples are often perceived as decadent and bourgeois. Cars are commonly said to have happy or sad faces based solely on the configuration of headlamps and radiator grills, whereas a house may be described as having a friendly feel, a welcoming ambience or perhaps even a calm and restful aura.

It may not be possible to establish a semantic connection between emotions and the very notion of experience or, perhaps, to pin down human emotions within a succinctly unified theory. Dr Gerald Cupchik, professor of psychology at the University of Toronto, integrates emotion with aesthetics; the span of his research is far-reaching and includes some fascinating insights on emotional response and industrial design. He claims that emotional processes involved in generating and using industrial design objects have only begun to be explicated. They begin with an initial impression of the object, continue through actual experiences utilizing it, and culminate with degrees of emotional attachment to it.<sup>19</sup>

Cupchik further claims that the formula 'cognitive meaning + arousal = emotion merges the analytical approach of British empiricism with the mechanistic principles of behaviourism'.<sup>20</sup> This formula is helpful as it begins to unpack the problem by deconstructing the genesis of emotion down into three elementary stages in a process. His theory indicates that a meaningful association must first be perceived with an object before users may experience any arousal and subsequent emotion. Or, to

## AUTHORS OF EXPERIENCE

put it another way, cognitive meaning provides the essential foundation upon which arousal and emotion are constructed.

Behavioural scientist Donald Norman contrasts this view, claiming that 'emotions are inseparable from and a necessary part of cognition. Everything we do, everything we think is tinged with emotion, much of it subconscious'.<sup>21</sup> He further develops the theory that design – and the way in which we interact with and process designed objects – may be split into three distinct parts consisting of a *visceral*, a *behavioural* and, finally, a *reflective* element. Norman calls upon three teapots to illustrate the point:

*Visceral* design concerns itself with appearances. Here is where the Nanna teapot excels – I so enjoy its appearance, especially when filled with the amber hues of tea, lit from beneath by the flame of its warming candle. *Behavioural* design has to do with the pleasure and effectiveness of use. Here both the tilting teapot and my little metal ball are winners. Finally, *reflective* design considers the rationalization and intellectualization of a product. Can I tell a story about it? Does it appeal to my self-image, to my pride?<sup>22</sup>

These three stages are indeed useful, while also being fairly comprehensive both as independent stages in a cognitive process and as a conceptual whole.

The simple fact that we have a name for each emotion does not mean that we understand them. Just as we have a name for the Universe or, perhaps, the ancient Chinese system the *I-Ching*, they are both very much mysterious and far from understood. In instances such as these, names aid the communication of general concepts; terms used to define emotions such as love, jealousy and melancholy also act in such a way as to provide general points of reference of which each of us may have our own particular interpretation that is based primarily on our accumulated experiences.

Although we have names for each emotion that enable us to differentiate between them on a semantic level, emotions do not actually exist in isolation; 'emotions are compounded phenomena involving expressive, behavioural, experiential and physiological facets'.<sup>23</sup> In this way, it can be seen that emotions are far more complex

*Just because we can name each emotion does not mean we understand them.*

*Emotions do not exist in isolation; they are compounded phenomena.*

than they first appear. They are inexplicably intertwined, making their origins practically indistinguishable.

Emotional responses make up the very foundations of individuality; they are what distinguish us from others. Through choice, simulation and association, products provide triggers for this vital sociological process to occur. If anything, a clear and unified theory that explains the origin, purpose and rationality of emotion would only serve to detract from the intuitive potency of design, effectively stripping another layer of charm from this overexplained world.

The Design and Emotion Society claims that:

The concept of experience, where the subject and object meet and merge with one another, is a key issue in designing emotionally meaningful products. This is because experience is a space in which all faculties, especially emotions, are activated.<sup>24</sup>

In addition, a given emotional response to an object will be largely dictated by the prior experiences of the onlooker. It follows, therefore, that emotions must also exist within a wider cultural context since the way we interact with and respond to the world is largely conditioned by our prior experiences. 'In each culture there are symbols that elicit favourable emotions shared by all members.'<sup>25</sup>

It is clear that although a designer can certainly elicit within users an emotional response to a given object, the explicit nature of the response is beyond the designer's control; the unique assemblage of past experiences that is particular to each user, their cultural background and life journey determine this. 'People can differentially attend to the sensory qualities of the design object and attach diverse personal meanings onto it because they see it used in various contexts. Their reactive emotions will therefore reflect personal associations and meanings, which are projected onto the object.'<sup>26</sup>

This might actually be one of the most crucial and relevant premises to grasp when designing experientially rich interactions between people and things, as these

*Experience is a space where emotions are activated.*

*The precise nature of emotional response may only be partially controlled.*

*No two people will experience the same object in the exact same way.*

## AUTHORS OF EXPERIENCE

idiosyncrasies elicit powerful sensations of individuality and uniqueness within users; therefore, no two people will perceive the same object in exactly the same way. This is because

[p]ersonal/symbolic meanings relate to self-concept and dynamic processes affecting both a person's motivation for engaging an industrial design object and also how it is seen. These motivations can lead a person to project supplementary meanings onto industrial objects which may not be directly related to their functions or appearances.<sup>27</sup>

As mentioned earlier, the way in which a user will perceive an object is largely influenced by the accumulative nature of their prior experiences; it follows therefore that personal experiences and emotional meanings

complete the image of the object whose appearance and functions are but initial cues as to their broader meaning. *The more an individual consciously or unconsciously relates to the sensory/aesthetic, cognitive/behavioural, and personal/symbolic qualities of an object, the more profound will be the attachment.*<sup>28</sup>

The designer's role could simply be to provide material artefacts that provoke some kind of emotional response from the user – whatever that may be – as users will ultimately project their own personality onto the object just as long as it continues to stimulate a response of some sort.

In most instances, users begin to accumulate emotional histories with objects from the moment of purchase; in many cases, this accumulative process initiates itself prior to purchase, as the most primitive connections between subject and object are often forged through shop windows, television commercials or, perhaps, from the pages of catalogues and magazines where the product was first eyed.

Most design researchers agree that it is desirable to create products that sustain their emotional content throughout the entire span of their physical life. However, emotional affect alone is insufficient; evolution and growth must also be present if the relationship between subject and object is to develop intimacy through the passing of time. The accumulation of emotional history is dependent upon this kind of growth as, without it, objects quickly stagnate. 'It is one thing to design products that elicit certain emotions; it is another matter to maintain those emotions that have been generated.'<sup>29</sup> Furthermore, when particular stimulus properties modulate

simple feelings of pleasure or arousal, the basic principles of behaviourism readily apply. For example, repeated exposure to a stimulus will reduce its potency for eliciting pleasure or arousal through the principle of habituation.<sup>30</sup>

In failing to evolve, the intensity and meaning of a given stimulus crumbles away simply through familiarity and repetition.

Overplaying your favourite CD provides a similar experience; the once soul-defining beauty of a particular track slowly transforms through repetition into a nauseating taunt, so sickeningly familiar that it almost becomes painful to hear. Some vinyl aficionados have to hold themselves back, refraining from playing their favourite 12-inch through sheer avoidance of the inevitable fate that awaits an overplayed and overfamiliar track.

Experience, and the stimulation that it provides, is not simply an inconsequential facet of entertainment or some whimsical means through which to pass the time; it incorporates rich elements of newness, novelty and uncertainty within the discursive engagement between subject and object. These new elements are vital ingredients of sustained interaction as they help to infuse that essential measure of connectedness between user and product, sustaining attention spans and relieving users from the monotony of an otherwise stimulus-impooverished engagement. The particular nature of the stimulus is also of great importance; novelty in a stimulus can generally increase arousal, while uncertainty (in a detective novel or suspense film) might alleviate a state of boredom or low arousal.<sup>31</sup> The way in which the stimulus is experienced may, therefore, be controlled to some degree and, ultimately, be deployed to alleviate boredom and understimulation or alternatively to cultivate an edgy state of uncertainty and doubt.

### **Immersive experience**

In an experiential context, to be immersed is 'to become completely occupied with something, giving all your time, energy or concentration to it'.<sup>32</sup> Like a pebble plunged into a glass of water, consciousness becomes swamped in the all-encompassing act of engagement to a level where nothing else exists – a kind of meditative state in which the conceptual barriers separating flesh from polymer dissolve away to create oneness between the subject and the object.

*The experiential barriers separating flesh from polymer dissolve away.*

## AUTHORS OF EXPERIENCE

Popular examples of this kind of immersive experience include virtual reality (VR), juggling, watching a thriller or perhaps having a heated argument. When interacting with the day-to-day offerings of conventional design, however, users seldom experience this degree of immersion. Few can testify to having ever experienced oneness with their potato peeler, and you may be hard pushed to find a consumer who has gelled on a holistic and metaphysical level with their bath taps. That said, degrees of immersion are prevalent in most – if not all – forms of subject-object engagement; and on some level, even the most banal and meaningless tools are capable of inducing some measure of immersive experience, brought about quite simply by enabling users to calmly engage in the process of using the object until conscious influence partially recedes, enabling the conceptual unification of tool and hand. Similarly, when the experience of using and interacting with the product becomes greater than the physical product itself, conscious recognition of the product drops back to make way for full cognition of the experience.

Immersive experiences are both intense and all-encompassing. The meaningful associations that users project upon objects capable of delivering such experiences possess a similar potency and frequently catalyze robust emotional connections between subject and object. It therefore follows that immersive experiences play a role in forging strong attachments between subject and object and that these experiences possess a far greater validity than simply to entertain, or sustain, attention span. Design culture columnist Wendy Richmond supports the value of these experiences by stating that 'a primary ambition of a designer is to deeply engage his or her audience' and, further, claiming that 'the best interactive experiences are ones that are immersive, that is, where you are deeply involved in the subject matter'.<sup>33</sup>

Although it may be possible for users to learn about an object via some literary means, such as an instruction manual, or perhaps through word of mouth as is often the case, it is only really through immersion that objects become known and, thus, wholly understood. This point is of particular relevance in the case of objects with complete or partially screen-based user interfaces, such as mobile phones, iPods and tablets, which must be engaged with on intuitive levels before any qualitative

*Few have experienced oneness with their potato peeler.*

*Immersion occurs when you become lost within the subject.*

understanding may be achieved. In addition, immersion is a contemplative process that requires a more prolonged and temporally drawn-out mode of interaction; due to the increasing speed of interaction today, this is becoming harder to achieve as engagements with objects become ever more fleeting.

In *Sein und Zeit*, Heidegger defined two ways in which we experience objects: 'ready-to-hand' and 'present-to-hand'.<sup>34</sup> When things are working properly, and we are absorbed in the use of them, they are ready-to-hand and we experience the world through the object. He gives the much-cited example of the hammer to demonstrate this, telling us how, when hammering, our attention is not on the hammer itself but on the nail we are trying to knock into the wall. In this way, we are caught up in the activity, enabled by the hammer. However, should the head of the hammer become loose and wobbly, our attention is drawn away from the nail and the activity of hammering toward the hammer itself. The hammer, according to Heidegger, is now present-to-hand and must be repaired in order for it to be ready-to-hand once more.

One could describe electricity in a similar way in that it only becomes noticeable when something goes wrong with it, like a power cut. Importantly, there are connections here between what we expect things to do and what things actually do. Often, we see natural facets of ageing, such as the loosening of the hammer's head, as some kind of disappointing product failure or weakness on the part of the object – disappointment being the consequence of a perceivable difference between expectation and reality.

In the case of the hammer with the wobbly head, repair is a fairly straightforward process, and this may in fact be why so many of us are happy to keep the hammer we have and fix it should it fail, thus making the return journey from present-to-hand (broken, and visible) to ready-to-hand (working, and transparent). In the case of a more complex product such as a hairdryer, for example, the return journey may be something more complex, and, in almost all cases, this perceived complexity leads to the discarding of the item.

The pace at which we live today is excessive, to put it mildly. As people rush frenetically from place to place, confusing activity with accomplishment, it is vital that we as designers remain critical of this behaviour and – more importantly – of its actual efficacy. Slowing down the feverish pace of interaction between people and things must not be seen as a commercially debilitating act or simply a nostalgic hark back to days of old, when life apparently ran at a far more civilized pace. To propose

slower modes of material engagement is also to propose a deeper and potentially richer experiential landscape of user experiences in everyday life.

In the instance of interacting with objects, speed is particularly anti-evolutionary. As in the case of any interactive process, excess speed can be highly counterproductive since it forces gross generalizations to be hurriedly made while also allowing those engaged in the said process to superficially overlook a great deal. By destabilizing both the fluidity and pace of subject-object interaction, users are empowered with the right to stop, think and contemplate what they are doing and, ultimately, why they are doing it. The way would then be paved for new and provocative genres of objects whose layers of meaning may be peeled back at differing rates, enriching the substance of the user experiences that we aim to deliver.

Technology is changing, but then it always has been. One notable change that is beginning to show itself is that of ambient technologies, which are said to deliver experiences that are both immersive and smart. Domestic electronics giant Philips believes that 'in the year 2020, people will relate to electronics in more natural and comfortable ways than we do now'.<sup>35</sup> This is, of course, a fairly safe assumption as generations described as the 'digital natives' come through.

This vision may strike you as reminiscent of the countless depictions of the future that were promised during the 1950s, 1960s and 1970s. Yet if you take a quick glance around, you will notice that we are not wearing silver foil bodysuits or eating a three-course meal from a single red pill, nor are you likely to have spent any quality vacation time on the moon in recent months. Therefore, visions of the future should be approached with slight caution as they are seldom realized in their entirety; the value of these visions lies in their ability to illustrate both the direction and orientation of recent culture – lighting the way ahead, as it is currently understood within today's terms of reference.

For many, forecasts simply depict utopian and idealized futures of optimized control, convenience and efficiency; and there is, of course, nothing wrong with this. However, other views are very much needed that provide alternatives to the capitalist model of master and slave, and hegemonic material engagements. When discussing the designing of immersive user experiences, Valerie Casey, creative director of San Francisco's Frog Design, states that conventional usability rules do not, and should not, always apply: 'Current [usability] practice is over-rationalized

*We are not wearing foil bodysuits  
or eating food pills, just yet.*

and focuses too deeply on task analysis and not enough on empathy.<sup>36</sup> As discussed earlier, functionality is not necessarily commensurate with user experiences and may, in fact, serve to the contrary.

In a technologically streamlined world, the dominant version of reality comes with the majority of problems already solved; all too frequently, we hear of technological innovation being discussed in terms of its ability to remove the decision-making process from humans, while the prevailing design perception of effective user interaction is similarly one of consumers promptly doing exactly what they are told without confusion or debate. Although helpful in certain cases, this model of prosaic interaction numbs the psyche and diminishes the intensity and consequent sustainability of user experiences.

The Philips vision of 'Ambient Intelligence' is 'people living easily in digital environments in which the electronics are sensitive to people's needs, personalized to their requirements, anticipatory of their behaviour and responsive to their presence'.<sup>37</sup> It is also clearly stated by Philips that 'one of the key aspects of Philips's Ambient Intelligence vision is to enrich the user experience'.<sup>38</sup> These are bold goals to set out and goals that, if achieved, would undoubtedly make a valuable contribution to the experiential fabric of daily life. However, we must remain mindful that if users become too comfortable with electronics and are allowed to live too easily within their domestic digital environments, there may, in fact, be very little experience left to enrich.

Conventional design has a propensity for dehumanizing technology, opting to deal with it in terms of minimalist nothingness characterized by an almost supernatural lack of physical presence. This mindset is reinforced further still by the endeavours of miniaturization wherein our technological genius as a species may be summed up by the degree of smallness we are able to achieve in a given product scenario. Also, power and speed will always be of prime importance to technological innovation.

It appears that 'mainstream technological development is heading for a world in which you wander around detached and godly without the need to be in touch with matter anymore'.<sup>39</sup> Indeed, immateriality presents a number of new and interesting experiential possibilities for users, while also hinting at a possible reduction in the

*The dominant version of reality comes with the majority of problems already solved.*

*Hey user, we don't need you anymore; but thanks for the offer.*

## AUTHORS OF EXPERIENCE

consumption and waste of materials due to a reduction in product mass. For these simple reasons alone, miniaturization is a creative destiny worthy of pursuit, although it must also be argued that a greater diversity in technological mediation is required.

Interacting with today's technocratic and anonymous assemblage of miniature digital artefacts can leave one cold. Objects have become excessively subservient, and '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'.<sup>40</sup> It must be questioned as to whether this level of material autonomy is actually healthy – like having a house full of domestic servants essentially strips the experience away from daily life by leaving us as users with nothing to do. At this point, technology's role becomes nothing more than a passive, reassuring hum in the background, sub-ordinately informing us that all is, indeed, well and that your anonymous assemblage of digital objects *d'art* are doing exactly what they should be and are able to function quite happily without outside help. Hey user, we don't need you anymore; but thanks for the offer.

# chapter

## five

### sustaining narrative

*Objects are storytellers, and as users we share unique personal histories with them – rich, complex and meaningful narratives, which form layers of significance, over time.*

#### Newness

Against the commercial backdrop of newer, shinier things, the implementation of desirable ageing strategies appears impromptu. Surely the modern-day societal pre-occupation to maintain glossy scratch-free worlds leaves no room for alternative, less transient modes of existence? The current model of industrialism has practically built itself around this ideal, delivering endless streams of faster, lighter, smarter and newer things – greasing the wheels of capitalism by stimulating the consumer demand for more, while maintaining the illusion of progress through constant, yet superficial, forms of innovation for its own sake.

Beneath the skin of this mass-manufactured illusion lie contradictions regarding the nature of the newness that consumers actually desire. These are inconsistencies that, if addressed, might project us beyond this physical world of glossy surfaces and smooth lines toward a more sophisticated

*The implementation of desirable ageing strategies appears impromptu.*

*Perhaps we desire new experiences, and not new stuff?*

form of newness based on the evolution of user experiences, sensations and emotions as encountered through complex interactions with objects – enabling users to sculpt rich and individually crafted narratives that map subject–object relationships as they evolve over time.

### Durable narrative experience

Products capable of delivering durable narrative experiences already pollute the mainstream. These include products that are meticulously repaired and upgraded, objects that are kept for vast periods of time, sometimes spanning generations, and other material possessions that are cherished, nurtured and even loved by users. 'It is no revelation that consumers possess objects to which they are strongly and weakly attached.'<sup>1</sup> However, the existence of emotionally durable artefacts has – thus far – remained cautiously quarantined within low-tech product genres as though their proliferation might slow down consumption of the all-important digital product.

Design is a cultivated form of invention, taking many forms. The Design Council studied 11 global businesses (including Sony, Whirlpool and Lego) and identified four sequential steps common to their design processes: discover (user and market research), define (ideation and concept generation), develop (apply, prototype and test) and deliver (tool, manufacture and launch).<sup>2</sup> As research has progressed, our awareness of design as a process has increased. The level of complexity that occurs within the process is accentuated by factors such as technology, sustainability, social responsibility, legislation and so on. As social and cultural boundaries continue to blur, so too do the borders of design as a discipline. Underlying epistemological and methodological parochialisms, wherein researchers operate within isolated disciplinary silos, hamper product life research. This leads to a persistent reproduction of the status quo, wherein key discourses surrounding the meaning and place of products in our lives fail to evolve or come together in any meaningful or transformative way.<sup>3</sup> Transdisciplinary encounters between disparate professionals, researchers, policymakers and activists at the intersections of psychology, economics, product design, innovation management, materials science and consumer studies begin to overcome this. These controlled collisions challenge assumptions and prejudices,<sup>4</sup> illuminate understandings outside one's own perception and call into question otherwise established world views. This process of 'defamiliarization'<sup>5</sup> helps us to

*Design is a cultivated form of invention.*

answer crucial research questions through catalyzing unexpected reactions, reframing understanding and integrating emerging knowledge about the role and place of objects in our lives.

Houseplants provide a pertinent example of a low-tech narrative experience. Once severed from the Earth and placed in a pot, they can either flourish or flag depending upon the degree of care invested in them. In return for water, sunlight and careful situation away from draughts, the plant will give you lush green feedback that your efforts have been recognized. Should the plant fail to do this – and perhaps start dying – most users will modify their approach and invest further effort to assist recovery. Experiences such as these somehow transcend the day-to-day trivia of material life and thus hold a place in the hearts and minds of users. This affords them a more elevated status than the often prosaic offspring of the mass-manufactured world.

Through their patient yet tangible forms of feedback, owners are able to perceive a non-programmed response that renders the plant conscious on some level. Consciousness is frequently interpreted by the consumer as the feeling of something that has autonomy – a set of intentions based purely around one's own particular existence – or something that seems to be in possession of its own free will, or alterity. Alterity relations are the dimension of an interaction in which the object of one's intention is perceived in terms of otherness. This particularly elusive concept could be described as the felt sensation of the interaction with an autonomous or intelligent object, animal or individual.<sup>6</sup>

### **Just noticeable difference**

Objects that evolve slowly over time build up layers of narrative by reflecting traces of the user's invested care and attention. In psychophysics, the term 'just noticeable difference' (JND) is helpful in defining the smallest detectable difference between a starting and secondary level of a particular sensory stimulus<sup>7</sup> and draws a useful distinction in describing minute changes in a given material, object, system or experience.

*Objects accumulate layers of narrative and meaning over time.*

If you take a look around you, everything that your eyes fall on will change – from the glass in those windows to the concrete of the building you can see through them. All of this is changing. Of course, our experience of the everyday tends to

happen through a series of fleeting glimpses, which provide a fragmented, artificial portrayal of reality. These passing snapshots capture isolated moments in a far longer and more complex timeline of an object, material or space. Only through sustained engagement with a given thing – be it a house, an armchair, a car or a pen – can we begin to understand it in the lengthier context of flow and change over time.

JNDs define the necessary degree to which something must be altered in order for the difference to be noticeable and perceivable. The principle of JND is illustrated clearly in 'boiled frog syndrome'.<sup>8</sup> The principle here is that if you take a frog and drop it into boiling water, the shock will certainly kill the frog instantly. However, if you were to place the frog in a pan of cold water and gently increase the heat, the frog will actually adapt to quite high temperatures before it notices that it is too hot. 'The frog has a fatal flaw',<sup>9</sup> explains psychologist Robert Ornstein. Having no evolutionary experience of boiling water, 'he is unable to perceive it as dangerous'.<sup>10</sup> Throughout their biological evolution, frogs have lived in a medium that does not vary greatly in temperature, so they have not needed to develop sophisticated thermal detectors in their skin. The frog in the pot is unaware of the threat and simply sits complacently until he boils.

Incremental growth, as is found in both houseplants and boiled water, advances in micro-steps that only begin to show their presence through the passing of time. A plant's growth rate is not immediately perceivable in real time; yet on returning home from a two-week holiday, the noticeable growth can be startling. Plants demand a degree of patience that for some strange reason is readily accepted by us and is found rewarding by most – an emotional commitment so rarely encountered in the made world.

### Creator and creature

In the slick and streamlined world of mass-manufactured goods, a handful of enduring storytellers still roam unchecked. Denim jeans have successfully delivered evolving narrative experiences to countless users for decades and are surely here to stay:

*After a party, your jeans smell like a party.*

You have a close relationship with your jeans. Your jeans are a second skin, faded and shaped and ripped and bulged by your experiences. They are lived in. After a party they smell like a party. They are a familiar old friend, a repository of memories, a comfort blanket.<sup>11</sup>



**Figure 5.1**  
**Denim jeans**

*Denims develop character with age, and they are practically at their worst when new; like a second skin, they are worn, moulded and torn by everyday experiences.*

Source: Jonathan Chapman, 2010

*Photograph by author*

Where the phrase 'denim jeans' originated, no one is quite sure. Although synonymous with Americana, the textile denim is believed to have originated in France some time during the seventeenth century. 'Most reference books say that denim is an English corruption of the French phrase *serge de Nimes*, a serge fabric from the town of Nimes in France.'<sup>12</sup> This robust textile was imported en masse by Levi Strauss in the US in order to clothe manual labourers during the great San Francisco Gold Rush of the mid-1800s. Its commercial growth began when

Levi Strauss and a Nevada tailor joined forces to patent an idea the tailor had for putting rivets on [the] stress points of [a] workman's waist-high overalls commonly known

as jeans. Levi Strauss chose to use the stronger denim fabric and cotton duck, putting his own name on the product. Later the duck fabric was dropped as consumers found denim more comfortable, particularly after washing creating the faded bloom on the indigo blue dyeing that we all love.<sup>13</sup>

The high-street fashion dominance of these garments was not truly established until the 1950s, however; after American heroes such as Brando, Dean and Presley wore them; teenagers of the era eagerly emulated their idols, and the die was well and truly cast.

Interestingly, a textile that was commonly known as 'jean' was prevalent even before this time, so called because it originated in Genoa, Italy:

It was apparently quite popular and imported into England in large quantities during the 16th century. By the end of this period, jean was being produced in Lancashire. By the 18th century, jean cloth was made completely of cotton and used to make men's clothing, valued especially for its property of durability even after many washings.<sup>14</sup>

Today, denim jeans are known for their durability, strength and unique ability to accumulate character through use. When

you next wear jeans, remember that

these pants are a direct descendant of the original pair made in 1873. And it was two visionary immigrants, Levi Strauss and Jacob Davis, who turned denim, thread and a little metal into the most popular clothing product in the world – blue jeans.<sup>15</sup>

*Mass-produced goods can age well, and they can gain character through use.*

Purchased like blank canvases, jeans are worked on, sculpted and personified over time. Jeans are like familiar old friends providing animated narrative to life – a repository of memories – mapping events as and when they occur. Like comfort blankets, they feel and smell familiar. The character they acquire provides a reflection of one's own experiences, taking the relationship beyond user and used to creator and creature. Similar in philosophy to the way in which voice recognition software sculpts itself around the phonic idiosyncrasies peculiar to a particular user, jeans become tailored to the physical individualities of the wearer to become a part of them.

To intensify the sense of creation further, people rip their jeans, cut them with knives, scrub them with a yard brush, bleach them and throw paint over them. One lady in New Jersey takes the notion of customization a step further by driving a pick-up truck over her pair, all to intensify and personalize the accumulation of patina. Second-hand pairs flaunting genuine wear and tear can even be purchased online, worn by real-life cattle herders, gold miners and a host of other rugged hands-on professionals.

This fast mode of narrative adoption is sometimes referred to as 'acquired significance', and it enables users to quickly slip into the life of another person, like a costume. Beyond the world of jeans, manufactured objects in general must endeavour to clearly express through their design a narrative that users can easily identify with while also being able to discuss it with their peers. When narrative experiences are communicable in this way, the objects that deliver them adopt even greater significance.

The somewhat unusual narrative experiences served up by jeans are enjoyed by millions of people each year and provide the cornerstone for a well-established and highly competitive industry. Yet despite the continual introduction of new styles, cuts and fabrics, most consumers are content at keeping the few pairs they already have. Transient heroes such as jeans and houseplants sidestep obsolescence by possessing evolutionary characteristics; they evolve slowly and amorphously through use to keep the story alive. Unfolding narratives such as these map human and object relationships as and when they develop. Similar

*When users develop empathy with products, a brand intimacy begins to form.*

in many ways to a diary, they place events within a chronological context that is exclusive to the user. When the time eventually does come for replacement, brand loyalty is generally high. '[T]he most powerful and lasting benefit you can give a customer is an emotional one.'<sup>16</sup> Consumers develop empathy with these products, which viscerally nurtures empathy with the brand. Customers are subsequently kept loyal and market share is healthily sustained. 'Emotion is not something layered on by a stylist. In an aircraft seat it is as much part of its function that the traveller feel calm, relaxed and safe as it is fire resistant, ergonomic and accordant with safety regulations.'<sup>17</sup>

For example, when textiles and apparel are designed and produced to adapt and improve with age, people keep and look after them for longer. Importantly, this

extended product lifespan does not always come at an extended cost. Rather, it is enabled through approaching the design of *things* in a particular way; by appreciating that the point of sale is just the beginning of the product story, and not the end. Grenson – a British shoemaker founded in 1866 – produce high-quality handmade shoes that improve with age and have enduring styles. Over time, a pair of Grensons will soften and sculpt to fit your feet; they *become yours*.

Much of this is due to the use of materials. But, there are downsides to leather. Despite its ageing qualities, leather does place a heavy burden on the environment. The average synthetic running shoe produces 8 kilogrammes of CO<sub>2</sub>. Primarily, this CO<sub>2</sub> is the result of materials processing, manufacturing, transportation and packaging. The average leather shoe produces 15 kilogrammes of CO<sub>2</sub> – over twice as much. In addition to the high carbon intensity of cattle farming, the process of 'growing' leather creates a great deal of methane, or CH<sub>4</sub> as it is scientifically known. As a greenhouse gas and main contributor to climate change, CH<sub>4</sub> is 25 times more potent per kilo than CO<sub>2</sub>. And so there is a dichotomy here: synthetic materials are at times more sustainable than natural ones as they can be kept within material flows on a cradle-to-cradle methodology. Sure, leather can be used in a way that extends product life and, in so doing, reduces levels of consumption and waste. On the other hand, leather has a heavy ecological burden – both in terms of methane production and in terms of the toxic compounds used in the processing and colouring of cow-hide. Using better materials and better quality of production will affect the longevity of a shoe, but it will also affect price; however, if this extra cost is understood by the customer, then they are more likely to buy into it.

Narrative experiences must not be overprogrammed; spontaneous occurrences create the magic between subject and object; without them, relationships seldom supersede the banal. Overprogramming is an inhibiting act that serves to sterilize outcomes. To overcome this mode of interaction, it is vital that sufficient ambiguity is present, leaving space for the inclusion of the user's psyche.

Into each discursive engagement between subject and object, users introduce their own unique cocktail of preconceptions, beliefs and ideals. Users can be drawn into discourse by embedding emergent properties that only become visible through engagement. The design of appropriately ambiguous scenarios torments users into perceiving artefacts through their own

*Users introduce their own unique cocktail of preconceptions, beliefs and ideals.*

individually polished looking glass, which makes the experience feel more personal. Spontaneity, magic and intimacy can therefore be catalyzed rather than planned through an object's ability to reflect the nuances of an individual user.

### The teddy bear factor

Swiss industrial analyst Walter Stahel discusses certain narrative phenomena in terms of their 'teddy bear factor'. Despite the toy market's daily introduction of newer and fluffier bears, teddies the world over are faithfully loved, cherished and adored for literally decades on end. When an arm falls off, it is sewn back on; if an eye becomes loose, it is fixed. Most adults – if pushed – will confess to still owning at least one bear: a bear with a gender, name and age. More importantly, they will share a rich history with the bear, elevating its often worn-out physical body to an irreplaceable plateau that is safely beyond the reach of obsolescence and waste. A new bear would not be the same; histories of this nature cannot be purchased and the many layers of emotional investment embedded in the old bear are impossible to replace or simulate. The innocent naivety of teddy bears undoubtedly provokes a deeper nurturing – an almost parental mode of attachment – that is both intimate and sustainable.

Certainly, a deep human need drives the existence of narrative experiences such as bears, jeans and houseplants; the origin of this need, however, is less certain. These attachments constitute a substantial element of the self-development process of human beings<sup>18</sup> and enable us to look upon the past self that we wish to cultivate. Material possessions are used as symbols of what we are, what we have been and what we are attempting to become.<sup>19</sup>

As an information-saturated society, we are plugged into a myriad narratives at any one given time. However, it is inaccurate to assume that a one-way flow of information should occur here. Consumption is a cybernetic process and narrative and, therefore, may seldom be experienced via a one-way master-and-slave hegemony. Rather, the flow of information must move in both directions and can be influenced or guided by subject or object, creator or creature. Therefore, false oppositions – such as consumer and consumed – can be misleading as they grossly oversimplify what is an intricate matrix of two-way, reflexive encounters.

As we pursue further meaning through objects, our ideals change, and so the quest for accurate reflections of a continually evolving self drives eternally forth. Until objects possess evolutionary capabilities enabling a co-evolution with the user, we

will forever be growing a landfill of discarded objects whose only crime was failure to keep the story alive.

### To cut a short story long

Most consumer products are like stories with an incredible opening line, but they just continue repeating it throughout. Their narrative capabilities are pathetically limited, usually consisting of one cute trick

that attracts the attention of passing consumers to engage them in an almost flirtatious semiotic dialogue. Born of a somewhat

*Most products tell stories with incredible opening lines, but that is about all.*

narcissistic mindset, objects of this nature

amaze from the shop window but tragically leave nothing in reserve. Rejection – like rot – promptly sets in to create colossal voids between the subject and the object.

Today's wastefully transient mode of consumption is not unlike the consumption of stories, movies, gossip and other social narratives. It too is a goal-orientated endeavour with a strong emphasis on uncovering the mystery, reaching the end and, ultimately, knowing all there is to know about a particular place, thing or occurrence. The Schumacher Society claim that quality of life 'is dependent on the number of stories we know about the items we use in our daily life'.<sup>20</sup> Therefore, to avoid unnecessary waste, it is crucial that products are designed with a greater narrative stamina, enabling their stories to patiently unravel over a rewarding period of years rather than just a handful of fleeting days, or even hours. As Julia Lohman argues: 'when communicating through objects the meaning is created through the materiality of the object. The materials become words; the design becomes the syntax. The piece speaks without the detour of language'.<sup>21</sup>

### Storytelling

Storytelling is an ancient art practised by people of all cultures since the dawn of human history, and it sustains meaningful cultural information through a rich archive of folklore, legend and other social narratives. Since early adapters evolved larger brains capable of comprehending abstract imaginative ideas, human cultures have evolved in terms of both their complexity and richness. Even prior to the development of language, stories were depicted over generations via numerous mediums from ritualized dance to meticulously crafted illustrations on stone surfaces. By immortalizing both physical and spiritual encounters in this way, life experiences



**Figure 5.2**

**Polymer ‘cork’  
brogues**

*Cheaper plastic wine corks have all but replaced natural ones. These storytellers, delivering a form of product protest to challenge traditional material values.*

Source: Tanya Dean and

Nick Gant, 2012

Photographs by Nick Gant

could be shared and rationalized among peers, enabling the cultivation of mutual understanding within social groups.

A captivating narrative must play on our deepest desires, dreams and fears in order to hold us in its grasp, enchanted and helpless. Like a puppeteer, an accomplished storyteller commands the psyche by artfully tweaking appropriate strings to cultivate subtle emotional responses within onlookers. Stories may flex and warp in reaction to audience feedback, allowing them to be shaped in real time.

Plato states: 'everything that deceives may be said to enchant.' Knowledge and understanding are agents of destruction. Durable narratives must therefore attempt to sidestep the deflowering gaze of the consumer, maintaining enchantment while never actually being fully understood. When familiarity does occur, this influences the waste element of the consumption experience – simply recount the last domestic spring clean to recall sensations of lightness, betterment and fresh feelings of efficiency:

The general movement of exudation (of waste) of living matter impels [us], and [we] cannot stop it; moreover, being at the summit, [our] sovereignty in the living world identifies [us] with this movement; it destines [us], in a privileged way, to that glorious operation, to useless consumption.<sup>22</sup>

Storytelling may also be deployed as an agent of memory, where abstract scenarios can be woven into familiar narrative sequences to assist in both the storage and recall of complex experiences. For example, the number 64321684 might be tricky to remember without multiple revisions. Yet if we are told that all the numbers are half the previous number – 64, 32, 16, 8 and 4 – it immediately becomes memorable for anyone who can divide by two. This technique of interlacing new data among existing knowledge is referred to (by cognitive psychologists) as 'chunking' and is widely utilized by educators to ease the learning process. However, designers could also harness chunking as a means of making abstract virtual experiences more tangible and comprehensive.

As faster and more virtual genres of social interaction are developed, the popularity of traditional storytelling as a mediator of sociocultural narratives is in rapid decline. This makes way for faster modes of preprogrammed material engagement in which anonymous narrative experiences are clumsily delivered via short, sharp bytes of one-way information – mass-manufactured artefacts that hastily recount

homogenized tales of technological genius and human accomplishment to a disenchanted audience of non-participatory users, projecting us forth into a disposable realm of superfluous materialism that is fuelled by a distinct lack of sustained interest in the stories being told.

The ecological impact resulting from this kind of alienation is variable and greatly scenario dependent. For example, a televised retrospective on the history of potato peeling in Belgium might simply provoke a lunge for the remote control with no real harm done. Conversely, when disinterest is allowed to gestate with manufactured objects themselves, the consequences can be both financially wasteful and ecologically hazardous. It is therefore imperative that narrative experiences are delicately planned to provide the user with sufficient time to build layers of emotional connection, while ensuring not to draw the experience out so long as to induce estrangement.

### A timeless fascination

When discussing autonomous products and the potential creation of objects that are in full possession of their own free will, it is worth remembering that there is nothing at all new or revolutionary about this:

The technological object has always been a source of interest and fascination for culture. Soon after the discovery of electricity, the concepts of the robot and 'Frankenstein' were introduced to society by the literary world. Yet, the notion of animating the inanimate is not new and need not depend on circuits and batteries. The ancient Hebrew Golem and a thousand flying carpets indicate that mankind's relationship with the physical has always contained far more than mere aesthetics or use-value.<sup>23</sup>

Written in a time of dramatic social and economic change – namely, the Industrial Revolution – Mary Shelley's *Frankenstein* provides further evidence of this growing societal fear of scientific and industrial endeavours, fuelled partially by the inborn urge of our species to recreate itself:<sup>24</sup>

*Frankenstein* is distinctly related to the revolutionary period of 1780 to 1830 or the period of the first industrial revolution. There was a strong conviction in England, in the early Victorian times, that rapid future changes would take place and there were wide differences of view about the extent to which they would be beneficial.<sup>25</sup>

Shelley's novel presents a cautionary tale about the unforeseen outcomes of scientific research, although it may also be argued that 'Frankenstein' can be read as a tale of what happens when a man tries to create a child without a woman.<sup>26</sup>

In 1950, science fiction writer Isaac Asimov created his first collection of short stories entitled *I, Robot*, consisting of nine tales depicting the lives of positronic androids. Within these tales can be found what he refers to as the 'Three Laws of Robotics', by which robots may effectively function without posing any threat to humans. The three laws are as follows:

- 1 A robot may not injure a human being or, through inaction, allow a human being to come to harm.
- 2 A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
- 3 A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.<sup>27</sup>

Asimov's Three Laws of Robotics serve to illustrate the degree of paranoia that surrounded the introduction of robots into the daily life of the 1950s, while also pointing out the broader suspicion that fully autonomous products would eventually revolt, turn on their human owners and, ultimately, seize control of the planet. In fact:

Asimov developed the Three Laws (with the help of his editor John W. Campbell) because he was tired of the science fiction stories of the 1920s and 1930s in which the robots, like Frankenstein's creation, turned on their creators and became dangerous monsters. The positronic brains of Asimov's robots were designed around the Three Laws, so that it was impossible for the robots to function without them. There were enough ambiguities in the three laws to make for interesting stories; but there was only one story in the collection, *Little Lost Robot*, in which a robot posed any sort of danger to a human being.<sup>28</sup>

Asimov created the Three Laws of Robotics as a guarantee that the human species may continue to exercise dominance over their robotic counterparts. However, eventually an autonomous and free-thinking robot results from a manufacturing error and begins to recognize its own superiorities over humanity.

### Layers of narrative

The rate at which narratives unfold is as crucial as the narrative itself. If the development is too slow, it will generate frustration; if it is too fast, it will alienate the consumer through utter confusion. However, there are still further considerations lying beyond the temporal nature of narrative delivery. In particular, durable narrative experiences must embody multiple layers, enabling a number of codependent narratives – and sub-narratives – to be experienced simultaneously. Similar in ethic to a Russian doll, products could be designed to incorporate numerous layers of narrative neatly housed within each other that reveal, on discovery, not answers or grand finales but deeper and more complex layers. The result is an edgy stream of cliffhangers rather than the singular fast-food jolt provided by the majority of future trash designed today.

*Like Russian dolls, objects elicit numerous layers of narrative experience.*

When speaking of alienation, German poet, playwright and theatrical reformer Bertolt Brecht claims that 'we don't want comfortable art, we want disruption'.<sup>29</sup> He saw continually punctuating disruptions as a highly effective means of maintaining a conscious connectedness between the viewer and the viewed, audience and performer – not unlike the way that MTV uses jolts to hold the audience's attention. A jolt or 'technical event'<sup>30</sup> is a sudden change in the direction of information flow. 'Public television boasts an average of 20 jolts per minute, 40 during commercial breaks, double what they were in 1978.'<sup>31</sup> At present, MTV is said to deliver over one jolt per second. The more jolts we are exposed to, the more likely we are to leave the remote control where it is; '[a] jolt forces your mind to pump for meaning'.<sup>32</sup>

*The pace at which a narrative unfolds is as crucial as the narrative itself.*

An ancient Arabic legend named *A Thousand and One Arabian Nights* tells the tale of a young woman who is lured into the tent of a murderous sultan. The sultan's original intention was simply to consume, then execute her. However, that night she artfully recounts the first part of a beautiful and mysterious tale. It is so compelling that he is unable to kill her since the story would not be continued the following night. As a result, the stories go on for 1,001 nights, as does her life.

*Frame tales are stories within stories, which deliver greater narrative complexity.*

This classic story – along with many others like it – is known as a ‘frame tale’, a story within a story. A frame tale is a sustainable narrative technique in which the main story is constructed in order to organize a collection of shorter stories. Narratives are discreetly packaged within other narratives, concocting wondrously rich narratives loaded with tension and complexity. Effectively authoring – or designing – frame tales can be complex and is something of an art, requiring a delicate balance of narrative logic spliced with a sense of edginess and uncertainty.

Narratives can also be utilized as agents of subversion, further enriching user-object relationships, keeping the interaction sufficiently ambiguous by delivering an ebb and flow of ever-changing fictional realities that sustain enquiry. Perhaps more provocatively, narratives can challenge the way in which we live, consume and perceive the made world by masquerading as familiar while secretly polluting the consumer psyche with subversive stories and ideas.

### Smooth morphic shifts

Users find it hard to engage deeply with artefacts where there is no growth, no change, no narrative and only predictability. However, change alone alienates users through a lack of coherence. Therefore, a smooth and seamless shift must be present in order to evoke sensations of mutual growth. For example, if a storyteller were to continually switch stories every few lines, we would surely become lost and, consequently, experience alienation. If, however, the story is incrementally developed and grown, we engage passionately with it.

*If a storyteller switched stories every few lines, we would soon become detached.*

Steadily unfolding narratives map the particular development of human–object relationships, thus closing the gap between self and other to create a unified experience. More importantly, users shape and influence the nature of narrative experiences by the very nature of interaction that occurs between two parties:

With this form of design, the ‘product’ would be a fusion of psychological and external ‘realities’, [and] the user would become a protagonist and co-producer of narrative experience rather than a passive consumer of a product’s meaning. The mental interface between the individual and the product is where the ‘experience’ lies.<sup>33</sup>



### Figure 5.3 Flip Flopsum and Jetsum

Plastic beach waste recovered by volunteers is made into flip-flops, on site, using a heat press. The products reward volunteers for their good work with a seaside souvenir.

Source: Tanya Dean and Nick Gant for Marine

Conservation Society, 2012

Photographs by Nick Gant



Users must therefore be designed into narratives as co-producers and not simply as inert, passive witnesses. 'The user becomes a protagonist and the designer becomes a co-author of the experience; the product creates dilemmas rather than resolving them.<sup>34</sup> This process enables the nature of user interaction to shape the emergent narrative, creating perceptibly one-off and individual experiences while ensuring the continued longevity of a given narrative experience.

*Users are co-producers of narrative experience, not passive witnesses.*

### Growing old gracefully

Each autumn – just like the last – arboreally inclined onlookers crane their necks to enjoy the green canopy shift hue to rusty brown and sun-baked orange. The stout wooden limbs seem so impermeable; and yet, somehow, each year they amaze us all with their delicate and colourful displays, littering our streets and pathways days later with a scattering of crisp papery leaves. There is a curious beauty to be found in such transience – an urgency and preciousness that compels us to hastily appreciate the spectacle before it is too late. But as anyone wearing corduroy flares will testify, everything – including fashion – moves in cycles: the changing of the seasons, the daily tag-team partnership of sun and moon and, of course, the fresh green leaves returning to the trees next spring.

Today – perhaps as a direct consequence of our streamlined and automated lifestyles – we seem to place ourselves beyond all this. Nature is frequently perceived as an opposing force – a random, unpredictable realm in constant rotation that must be beaten down and controlled.

According to Georges Bataille, nature is widely perceived as an entity that could be likened to an unbroken horse that cannot be tamed. If we fail to train and suppress the wildness within the horse, 'it is we who pay the price of the inevitable explosion'.<sup>35</sup> As though in reaction to these anxieties, we have learned how to convert natural resources – a term applied to matter for which we have a commercial use – into homogeneous mass-produced materials. These materials enable us to easily and

*Resources are what we call matter that we have a commercial use for.*

*Nature is likened to an unbroken horse, which must be tamed.*

quickly manufacture vast quantities of products that are *built to last* and that *stand the test of time*.

Repeated attempts to freeze out nature's inevitable decay have enabled us to develop a diverse palette of materials that are no longer recognizable to the microorganisms and enzymes that degrade substances back to their basic nutritional building blocks. In doing so, we sidestep the degenerative glare of biological decay and now exist in a realm of relatively untouchable material immunity. 'We are on the brink of a materials revolution that will be on a par with the Iron Age and the Industrial Revolution. We are leaping forward to a new era of materials.'<sup>36</sup> Yet despite the proto-durability of today's palette of materials, ageing still occurs and comes at an increasing cost to the environment, as ungraceful ageing is frequently the precursor to waste.

Interaction between subject and object – user and product – is not as fleeting and ephemeral as we might assume, nor is this interaction confined to the moments in which we are actually using something. The emotional interaction between a husband and wife, for example, does not grind to a halt simply because they are both at work; in their absence from one another throughout the working day, feelings, thoughts and the recalling of moments occupy their minds to ensure that although they are parted in a physical sense, emotionally they have been together all day. Back in the made world of interaction between people and things, we can see that this nature of continuous engagement – in a real sense – only takes place within the user, as products are not currently equipped with the degree of autonomy required to support such an emotional exchange. Although product-side evolution frequently takes place on a minor scale, at present these developments are generally of a destabilizing nature.

If enduring narratives between emotionally demanding users and comparably inert products are to be nurtured, we as designers must look beyond objective considerations such as styling and ergonomics to consider deeper sensorial dimensions of objects. For example, the ageing properties of the materials we specify could be further exploited to engender new genres of objects and experiences in possession of evolutionary characteristics. This is not to say that everything should be made using wood, denim or, perhaps, leather; instead, provocative design concepts could emerge that challenge our social desire

*The social desire for a pristine, scratch-free world must be overthrown.*



**Figure 5.4**

**Stain teacups**

*These teacups are designed to grow old gracefully and improve over time. Through picking up the tannin in tea/coffee, a pattern is slowly revealed.*

Source: Laura Bethan Wood, 2006

*Photographs by WoodLondon*

for a scratch-free world, illustrating how the onset of ageing could concentrate rather than dilute the *gestalt*. When ageing is embraced in this way, we can see that the transformative nuance of decay can be utilized by designers to great effect, ensuring that products are free to age and evolve gently over the course of time, rather than being ruthlessly discarded the moment their glossy façades of newness begin to peel away.

The accumulative process of ageing in products is inevitable. Whether we like it or not, things get old; and it is, therefore, important that we begin designing for desirable ageing, accepting mortality by embracing the inevitable fate that awaits all matter on this planet. That said, scratches, dints, stains, knocks, gashes, chips, cracks and scrapes are generally perceived as defects whose presence serves to brutally scar an otherwise virginal landscape. This leads us straight to the issue of perfection:

Numerous car owners polish their vehicle every week. It is the only way in which they can hold up the illusion of newness. Because perfection is vulnerable. A small scratch on a mudguard does more harm to a car than dismantling the engine.<sup>37</sup>

Products whose key design values lie in the degree of newness portrayed are especially vulnerable to the glare of decay. In designing perfection, you also design an unstable and highly vulnerable relationship between subject and object. The moment *Perfection is vulnerable*. that fragile illusion of perfection falls under threat, so too does the relationship that is founded upon it.

### **Ageing material surfaces**

The values affixed to the ageing of material surfaces are loaded with contradiction and are, at present, deeply genre dependent. Whether the steady build-up of scars on a medieval oak floor or the withering gloss of a mobile phone chassis, patina plays a crucial role in both the mapping and portrayal of age and must come with carefully authored appropriateness to the genre if undesirable outcomes are to be avoided. Patina writes narrative into both the semi-otic make-up and aggregate semantic of material experiences, holding great

*The values affixed to ageing material surfaces are genre specific.*

influence over the particular nature of the experiences that users are likely to perceive.

If the presence of patina draws too much attention to itself, consumers will perceive the resulting experience as preprogrammed and inauthentic, ramming a colossal wedge between subject and object. In reality, sustainable narrative developments are complex and about far more than just the ageing of material surfaces, or a dint here and a scratch there. It is therefore imperative that patina is seen as a codependent element of the whole rather than a one-stop approach to durable product design. Patina is, indeed, a potent addition to the designer's toolbox, but one that must be deployed with both subtlety and caution.

It is commonly accepted that ageing surfaces can add character to objects, giving them a history, and a story. Yet, more often than not, this ageing process devalues products by enforcing their sense of age and consequent loss of currency. Needless to say, this debilitating phenomenon is particularly prevalent within the digital product genre where – at present – the primary value indicators are focused almost exclusively on modernity. There are, of course, countless other product genres circulating in the mainstream in which the accumulation of patina might afford objects with an elevated status that lifts them above the bland anonymity of a mass-produced world. Patina, through steady accumulation, provides signs of life, clues of use and other decipherable indications of an object's otherwise secret life. From grandma's walking stick with the worn handle to the key-chipped paint around the car door handle, ageing material surfaces reveal signs of life by scripting the user within the otherwise inanimate object.

### Against the 'box-fresh' ideal

Popular design has a distinct preoccupation with producing 'box-fresh' experiences—objects that are at their absolute best when virginal and new. This means that both the meaning and the value of such products deteriorates over time. The offspring of popular design are so finalized and complete as to leave no space for the user to incorporate their own identity, and any post-purchase alterations that do occur grate harshly against the existing overly programmed aesthetic.

This approach to design can also estrange users from the process of creation by turning objects into nothing more than ornaments of utility. Idealized entities to be

gazed upon such as art gallery exhibits are protected at all costs from the degenerative smudges and scuffs of an imperfect organic world. In any physical product scenario, the ageing process will occur as it always does; it is therefore crucial that products are designed to both accommodate and embrace their inevitable future. This way, the onset of ageing will concentrate rather than dilute the *gestalt*, while reframing signs of age and overall product maturity as desirable.

*Work with the smudges and scuffs of an imperfect world.*

Users occasionally step outside of their anonymous streamlined worlds into a stochastic consumer landscape inhabited by elite genres of temperamental, high-maintenance experiences. The maintenance requirements, and subsequent customization of objects within this genre, are often seen as the precursor to the generation of character, enabling them to somehow transcend their mass-produced identities by metamorphosing into something far more singular and charismatic. Whether a temperamental vintage car, the woodworm-riddled legs and faded lacquer surfaces of an antique dresser, or even the weathered face of an elderly grandparent, the process of ageing frequently lends an enduring charismatic quality to the experiential whole. ‘The term “character” neatly describes the meaningful content of an object when consciously experienced.’<sup>38</sup> It must also be said that when technological contemporaneity is not the sole value designed into an object, its resilience to superficial innovation is fortified by being equipped with other, less transient, values.

Physical experiences that confidently flaunt the scars of age without apology or justification adopt a notable degree of integrity that enables them to grow old in a dignified manner. What may ordinarily be seen as flaws somehow serve the contrary – affirming the authenticity of an object’s claims of age by subtly depicting a narrative to the particular nature of its life. In a world where respect for our elders is a practically universal doctrine, such behaviour is hardly surprising and signifies the enduring human urge to engage in evolving, durable relationships.

Designing products with the capability to deliver enduring narrative experiences is not simply a matter of appropriate material specification or selecting natural and transient materials, such as denim or wood as opposed to cold and often sterile polymers such as Acrylonitrile Butadiene Styrene (ABS) or polycarbonate. On the contrary, narrative experiences can be driven by a multitude of designable means of which appropriate material specification is just one. Clearly, materials have a

## SUSTAINING NARRATIVE

crucial role to play in the ageing process, both in terms of their physical endurance properties and social evaluation. However, the social values affixed to the ageing of material surfaces are intensely complex. Natural-fibre carpets age badly while pinewood floors are practically at their worst when new; and leather-bound books improve like fine wines whereas a conventional hardback appears dog-eared and tatty. Despite these gross inconsistencies, patina is, indeed, a necessary – if not imperative – design consideration to assist the extension of product lifespans in graceful and socially acceptable ways.

# chapter

## six

### de-fictioning utopia

*As we engage with everyday objects, their fictional character ordinarily erodes; for objects to sustain fiction, they must possess an ability to conceal, mislead and adapt.*

#### The problem with utopia

In 1516, British writer Thomas More created what he called 'Utopia', an uncomplicated vision of an apparently flawless future depicted via an imaginary island that enjoyed the greatest perfection in politics, law and all other aspects of life. Although fictional,<sup>1</sup> More's text emerged from a very real disenchantment with his life in sixteenth-century England. Of course, utopias such as this seldom find their way into conventional reality. Yet they play a key societal role by illustrating the direction in which we may collectively face, while raising pertinent questions regarding the social values that underpin these idealist visions of the future.

*Utopias are destinies to be chased and futures to be pursued.*

In describing our societal preoccupation toward casting utopian visions of the future, social activist Jeremy Rifkin states that:

## DE-FICTIONING UTOPIA

Every society creates an idealized image of the future – a vision that serves as a beacon to direct the imagination and energy of its people. The Ancient Jewish nation prayed for deliverance to a promised land of milk and honey. Later, Christian clerics held out the promise of eternal salvation in the heavenly kingdom. In the modern age, the idea of a future technological utopia has served as the guiding light of industrial society. For more than a century utopian dreamers and men and women of science and letters have looked for a future world where machines would replace human labour, creating a near workerless society of abundance and leisure.<sup>2</sup>

In this respect, utopias are imaginary places considered to be perfect or ideal; they are destinies to be chased and futures to be pursued. For an onward-facing species such as us, utopias are vital; they free us from the shackles of an imperfect present by revealing a limitless world of imaginable futures, providing us with hope, optimism and, essentially, a reason to continue.

Yet utopias possess a dark side. They set up unrealistic expectations, generate false hopes and, ultimately, foster a restless culture of perpetual disenchantment with the now. In this respect, utopias are antagonistic; their immaculate renderings of the future merely serve to point out the otherwise unnoticed deficiencies of our present lives by repeatedly taunting us with glossy portrayals of how things could, should and ought to be.

Over the last century the concept of Utopia has steadily crept its way into almost all aspects of modern life. Today, the societal thirst for visions of a perfect future is insatiable, frequently deployed like an umbilical cord to sustain demand-nurturing industries such as advertising, marketing and design. In consequence, the orientation of individual utopias is steadily becoming more and more prescribed. After all, 'utopias are supposed to be places where everyone is happy; but conflicts over what constitutes happiness are almost inevitable. Getting everyone to agree on how to be happy becomes an effort at social engineering that risks becoming totalitarian control.'<sup>3</sup> This is another trap presented by utopias: they streamline culture into one approved version, snuffing out creativity, diversity, individuality and spontaneity in the process.

*Utopian thinking frees us from the shackles of an imperfect present.*

*Overly unrealistic expectations can foster disenchantment with the now.*

### Design is utopian

The current model of technocentric design is in danger of falling into this trap by producing streams of objects that signify utopian values founded upon a single prescribed and socially approved version of reality. In so doing, material culture becomes inadvertently homogenized into one popular version, forming a monoculture that embodies only one vision of the future, one utopia – a utopia that has us all sitting around, jobs done, with nothing to do. Meanwhile, a gentle background noise of bleeps, hums and clicks serves to remind us that our products are at work and all is, indeed, well on the home front. ‘Perhaps the centralized system that led to such a suffocating monoculture was a historic anomaly, an artefact? The technology of the phonograph, radio and television demanded centralization.’<sup>4</sup>



**Figure 6.1**  
**Wandular**

*Wandular is an investigation into how we might overcome obsolescence in consumer electronics and see if it is possible to develop a device that evolves with you over your lifetime, ageing stylishly and staying up to date thanks to cloud downloads and hardware plug-ins.*

Source: Sony, Forum for the Future and Engage by Design, 2013

Photographs by Engage by Design

New genres of design must develop – beyond the centralized world of lighter, faster, smarter – which adopt a more critical stance, creating challenging and provocative portrayals of the future, delivering numerous conflicting projections of tomorrow, which through their existence illustrate that there is more than one way to live your life:

Instead of thinking about appearance, user-friendliness or corporate identity, industrial designers could develop design proposals that challenge conventional values . . . [N]ew strategies need to be developed that are both critical and optimistic, that engage with and challenge industry's technological agenda.<sup>5</sup>

The values signified in mass-manufactured objects need to develop a more provocative edge, diversifying to incorporate elements of fantasy, hyperreality and fiction. They need to provide a rich critique of our present situation through objects that deliver alternative values to enable the exploration of numerous alternative realities.

### Fiction

Fiction is based on the imagination and not necessarily on fact; it facilitates the finding of fantastical narratives depicting alternative realities, often laced with a healthy dose of utopian idealism or, indeed, dystopian doom and gloom. Fictional narratives abound – whether epic tales of romance such as Margaret Mitchell's *Gone with the Wind*,<sup>6</sup> or apocalyptic fantasies such Philip K.

Dick's *Blade Runner*,<sup>7</sup> George Orwell's *1984*<sup>8</sup> or William Gibson's *Neuromancer*.<sup>9</sup> *Fiction is not whimsical; it has a vital sociocultural purpose.*

Although the aforementioned works may, indeed, be compelling, fiction does not simply exist for the sole purpose of entertainment and is more than just a literary genre or category of movie per se. Fictions perform a vital role by weaving rich narrative threads throughout our daily lives, which we may cling to and engage with on both emotional and rational levels; they serve to illustrate our innermost fears, anxieties, desires and hopes as a societal collective.

Fictitious narratives also provide an invaluable resource of consumable experiences. Although not overly concerned with truth, fiction is not a dishonest medium: it simply manipulates notions of the possible, the real and the seemingly unreal. It may be said that 'in our predominately materialist culture we take it for granted that

the physical world is real. But in what sense are experiences, thoughts and feelings real?<sup>10</sup>

When consuming fictional narratives, their detachment from reality becomes unimportant, as the physical and emotional experience of engaging with fictions is very real; they powerfully stimulate and agitate our curiosities and we are compelled, tantalized and mystified by them. Furthermore, unlike 'utopia', the term 'fiction' makes no value judgements and merely denotes versions of reality that may be experienced, which are not necessarily better or worse than the norm.

Fiction may be found in countless aspects of life, and its reach far exceeds the domains of bookstores and movie theatres. In the world of goods, consumable fictions from the bizarre to the banal proliferate, purveying fictitious renderings of reality from deep within the semantic layers of objects. The embedding of consumable fiction within product semantics is commonplace and can be found in almost all product scenarios. For instance, refrigerators' gloss-white façades fictionalize a cleanliness that is not actually there; air intakes on the side panels of a BMW Z1 spin the fictional yarn of a high-performance beast-like motor panting for breath; and the handles on the corners of a Mac create a fictitious caricature of nomadic urban mobility.

Although it is quite obvious that these fictions have been designed into a given product appearance, this fact remains somehow irrelevant to us as end users – just as we know a fictitious literary work may have been similarly conceived, linked to reality only through metaphor or other abstract means. Our desire to explore and consume fictions as perceived in objects bears strong similarities to the way in which we might consume a fictitious movie, play or novel. The emphasis is not on authenticity or truth, but on experience and meaning.

*Fiction's emphasis is not on authenticity or truth, but on experience and meaning.*

### The need for fiction

Fictional objects possess a tantalizing quality that consumers find impossible to leave unattended, and this is hardly surprising. The endeavours of industrialization have steadily transformed consumer culture into a hands-off experience where practically everything is done for us. The questions have been answered, the problems have

*Through our own genius, we have incrementally stripped the world of its charm.*

## DE-FICTIONING UTOPIA

been solved and the mysteries have been demystified. Through our own genius, we have incrementally stripped the world of its charm and mystery; by relentlessly peeling back layers of the unknown, we uncover truths that somehow nullify the otherwise enchanting world in which we live. Just as the sight and sound of a thunderstorm no longer connects us with an outraged God, with knowledge and certainty follows a deadening silence as there are no more questions to be asked and no further fictions to pursue:

Corporate futurologists force-feed us a 'happy ever after' portrayal of life where technology is the solution to every problem. There is no room for doubt or complexity in their techno-utopian visions. Everyone is a stereotype, and social and cultural roles remain unchanged. Despite the fact that technology is evolving, the imagined products that feature in their fantasies reassure us that nothing essential will change, everything will stay the same.<sup>11</sup>

As everyday life continues to become more and more programmed, the need for fiction, complexity and dialogue increases exponentially. For today's comatose consumer, fiction is no longer a question of desire but one of absolute necessity.

### Consumption is a process of de-fictioning

Most products provide us with a utopian, idealized and slightly fictional view of how the world could be; they are fictional in that they depict imagined futures – alternative versions of reality that users feel compelled to pursue and engage with. Yet the alternative realities mediated by these objects are mere glimpses – fleeting moments of experience that are short-lived to say the least. Products must therefore possess richer, lengthier and more complex fictions if the consumption process is to be both satisfying and longer lasting. In this way, the process of consumption may be reframed as a process of de-fictioning the world since once fictions are explored, demystified and known, the story essentially ends and new fictions are sought.

The desire to pigeonhole and categorize is destructive, stripping potential experiences of their individuality and freshness. Products must resist categorization to keep the debate alive and maintain a tantalizingly fictional existence. Indeed, de-fictioning is an apocalyptic process of serial destructions that must be avoided at *As life becomes ever more programmed, the need for fiction increases.*

all costs. An object must sustain its fiction to continually engage the user; if not, fictions will be found elsewhere.

### Deflowering

New and consequently unfamiliar products radiate mysterious enigmatic qualities that quickly crumble away once familiarity begins to accumulate between the user and the object. Sartre refers to this existential mode of being as the 'deflowering' of an entity.<sup>12</sup> 'Deflower' is a somewhat dated literary or poetic term, meaning to deprive a woman of her virginity or, less commonly but more literally, to 'strip a piece of land of its flowers'.<sup>13</sup> Notice in these two descriptions the words 'deprive' and 'strip'. Both indicate an involuntary submission imposed by an outside force.

*As familiarity sets in, novelty crumbles away.*

In the context of subject–object engagement, it is clear to see how Sartre's notion of deflowering may assist the framing of what is a fairly complex metaphysical exchange. The uptake of products is motivated, in part, by this notion of deflowering. We consume the unknown in order to demystify and make familiar, similar to the way in which we might wade through the pages of an Agatha Christie whodunnit in search of a villain to end the mystery. The process of consumption is as much about the journey – or process – as it is the final destination. In addition, consumption is a transformative process through which we grow and evolve in reaction to the experience of engaging with objects, although in the case of most consumer goods, this journey is all too brief. As discussed earlier, consumption is a process in which we attempt to know, familiarize and, thus, outgrow the wonders of the artefact. Sartre refers to this manner of knowledge-seeking as 'a deflowering of the entity'.<sup>14</sup> Adaptive meaning would ensure that the consumer's attempts to deflower continue on as the object of consumption is never actually the same thing – it is continually changing, and therefore the pursuit endures.

### Sustaining fiction

For an object to portray a fictional character, it must first be in possession of an ability to conceal – holding a few cards up its sleeve in order to avoid total discovery. It must keep its distance by holding a part of itself back, releasing subtle layers of meaning at steady intervals. The importance of

*To sustain fiction, products must conceal, avoiding total discovery.*

## DE-FICTIONING UTOPIA

holding something back may be illustrated through the childhood experience of eating a cake with a coin hidden somewhere within. The process of consumption is kept alive with anticipation as the next mouthful might just be the one! The importance of this phenomenon is illustrated the moment the coin is discovered; the intensity of the experience from that point on quickly diminishes due to the realization that all has, indeed, been revealed. The once-enchanting cake is instantly relegated to the status of *just another cake*. The same may be said of mass-manufactured products in that something significant is lost the moment the extent of an object's features and functions have been fully explored and encountered.

The majority of user experiences fade over time as users become accustomed to the stimulation provided. Having repeatedly experienced all the features and functions offered by a given product, there is literally nowhere left to go. It is usually at this point – and seldom prior to it – that users begin to consider upgrades, adaptations and other operational modifications to their now *de-fictioned* artefact in a vain attempt to restore, or somehow revive, the fiction that once proliferated.

Even the most intense user experiences will potentially fade simply through excessive repetition and the onset of familiarity. The glare of de-fictioning therefore falls upon all objects that fail to sustain a degree of enchantment and mystery. Products possessing overly programmed semantics – or perfect products – are particularly vulnerable to the glare of de-fictioning. This is because they are too black and white, too easy to map and pigeonhole; in so doing, they leave little or no room for that crucial whiff of ambiguity that so often sustains the dialogue between subject and object. The challenge, therefore, is to blur the boundaries between the real and the fictional while provoking a mode of mental consumerism that invites users to engage with sophisticated questions and ideas through everyday objects.

## Consciousness

Deeper and more intense bonds are forged between users and objects when products portray a perceivable sense of consciousness. This is not to say that objects should literally be conscious. Rather, objects could react to surroundings with a receptiveness that creates the impression of independence. In so doing, a world of richly diverse, amorphous and less predictable interactions unfolds, enabling far richer and more enduring engagements from within the regular confines of material culture. In addition, fictional characteristics often manifest in conjunction with the embedding of consciousness, as the degree of 'alterity' portrayed by the object is

notably higher; while the product's degree of self-awareness also affords a greater diversity and pluralism in feedback, which, in turn, creates a richer and more fictional palette of subject-object interactions:

Alterity relations are the dimension of an interaction in which the object of one's intention is perceived in terms of otherness. This particularly elusive concept could be described as the felt sensation of the interaction with an autonomous or intelligent object, animal or individual.<sup>15</sup>

Alterity is frequently interpreted by the user as the feeling of something that has autonomy, a set of intentions based purely around one's own particular existence – something that seems to be in possession of its own free will.

Products should respond to a greater diversity of triggers than just on/off switches, volume controls, buttons, knobs and dials; in theory, products and their remote controls do not even need to be prodded and poked in order to function. It is plausible and interesting to conceptualize a range of products triggered simply by immediate environmental stimuli, such as air temperature, proximity to walls, proximity to user, local brightness, time of day/year or global positioning. We have become so overfamiliarized with and preconditioned to the push-button world of on and off that it feels quite bizarre simply imagining it as being any other way. Yet it is this overfamiliarization that is holding us back, both as a creative industry and as a society of forward-facing consumers.

*Products could respond to a wider range of triggers, stimuli and inputs.*

One example of this would be the camera. Despite continual technological development, the 'say cheese' relationship that we have with cameras has evolved relatively little over the last few decades. Even today, with digital cameras in every smartphone, the way in which we interact with and functionally take pictures remains unchanged. The result is the all too familiar collection of rigid and self-conscious shots that usually follow any given family holiday, day trip or notable event – images that tend to result from attempting to capture reality with a push-button camera. Has the camera really evolved, or are cameras just more ready to hand than before?

For example, what if cameras were triggered by sudden fluctuations in heart rate and their operation placed beyond the conscious control of users? The photographs

that result would provide alternative depictions of events based on emotional responses to given stimuli. Cameras would immediately become windows into the secret emotional lives of others, and ourselves. Viewing the post-holiday snaps might uncover some revelatory truths about what really made you tick. If one's dog were to wear one of these cameras, it might be something of a revelation to experience what makes them excited.

Simulated consciousness can also be embodied by means of knowledge-acquiring systems or learning systems. In these instances, consumable consciousness deploys itself as a provocateur, acquiring information about a particular user which is then used to 'detour their assumptions'<sup>16</sup> sustaining the two-way dialogue by keeping it alive and thriving. In other words, the product must develop knowledge of user patterns in order to jolt them and respond to them. The ultimate aim is to deploy simulated consciousness as an agent of discourse, rather than streamlined efficiency (as is commonly the case), broadening the discursive relationship between human and object to encourage the nurturing of pluralism in subject-object encounters.

The need for this manner of engagement is exemplified rather well by the increasingly popular experience of doing your weekly food shopping via the web. Beyond the relative stealth of online shopping and its obvious advantages, such as affordable home delivery, removal of the lengthy queuing process and an end to the wrestling of trolleys with minds of their own, online food shopping may have long-term detrimental effects. Due to the way in which most supermarkets have defined their web presence, shopping behaviour becomes incrementally streamlined over time. Websites present users with the time-saving option to simply repeat last week's shopping in a single click which, despite convenience, streamlines our eating habits while stripping away the diversity and variety that we, as a species, so dearly depend upon. Of course, supermarket sites will develop a unique user profile for each and every one of their customers and use it to make product recommendations based on what their market research tells them you will probably like. Other forms of internet shopping deploy this strategy. Amazon, for example, will recommend books – with a fairly shocking degree of accuracy – purely on the basis of your recent buying history.

Back in the world of subject-object interaction, an equally streamlined and experientially debilitating process is in effect. Mass-manufactured products possess a similarly repetitive model of interaction, which streamlines engagement through the

passing of time until users are barely aware of what they are doing. Products perform their tasks well – maybe too well? Tools that begin to explore the simulation of consciousness such as artificial intelligence and artificial life are all too frequently discussed in terms of their ability to remove the decision-making process from humans. Refrigerators that email an automatically updated shopping list to the supermarket or 'smart bins' that separate rubbish into predetermined recycling categories all contribute to the streamlining and 'dumbing down' of the user. These are dangerous commercial practices to cultivate; by removing the decision-making process, they inadvertently homogenize society into an ever more programmed, predictable and monocultural mass.

*Caviar farmers see black ceramic balls differently than professional snooker players do.*

### Through an individually polished looking glass

We bring our own psychological baggage into the process of consumption; this is why material engagements can seem so personal to us. For example, a mass-produced black ceramic sphere will provoke quite a different emotional response from a caviar farmer than it will from a professional snooker player. The object is the same, but the user-response is anything but.

*In removing the decision-making process, you dumb down the user.*

This point may be further exemplified by the forging of attachments; although they can be catalyzed in a number of ways, emotional attachments are particularly tricky to engineer. After all, 'for personal reasons one can feel emotionally attached even to a turnip or a hubcap'.<sup>17</sup>

Each individual end user is in possession of their own unique archive of memories and personal meanings, which play a key role in accumulating further meaning by affording even the most banal objects with powerfully transformative properties that enable them to effortlessly transcend their former predispositions to become vigorous symbols of the self and carriers of great personal significance. 'No man ever looks at the world with pristine eyes. He sees it edited by a definite set of customs and institutions and ways of thinking.'<sup>18</sup> In this respect, it is fairly simple to see how each of us views the world – both made and unmade – through our own individually

*We bring psychological baggage into the process of consumption.*

polished looking glass. It is important that designers learn to embrace these common idiosyncrasies, deploying them as agents of sustained fiction, since they serve to keep the dialogue between subject and object alive and thriving.

Frequently, the purpose of our consumption actually centres on the notion of an emergent property that only becomes visible through discursive engagement. Is it accurate, therefore, to speak of a product

as being able to possess meaning? Surely a product or any other assemblage of matter is only capable of ‘absolute signification’,<sup>19</sup> or

the driving of sensations within the perceiver or consumer.

In this respect, false oppositions such as consumer and consumed are misleading, not to mention oversimplifying of what is actually a highly complex assemblage of relationships. Such simplifications assume a one-way flow of information and possess an anthropocentrism that hinders the development of consensual agreement.

*Products do not possess meaning – they elicit meaningful associations within us.*

Consumption is a cybernetic and polemical process embodying a need for codependence and mutuality: we do not consume matter, we engage with it; nor do we consume a world of information, we relate to it.

Designing products that mystify users through the presentation of fuzzy interfaces or spontaneous interactive jolts is entry-level practice and, therefore, relatively straightforward to achieve. Yet, although the felt sense of fiction can so easily be projected through designed objects, it is far more complex and problematic for designers to influence what happens after this initial projection. In experiential terms, the transformative character of sustained engagement that unfolds between people and things can only be loosely directed by designers, set off in the right direction and guided within fairly broad emotive parameters. This is due to the arbitrariness of human memory and its influence over the uniqueness of each end user’s prior experiences – experiences that powerfully influence the way that they, as individuals, experience a world of manufactured objects and experiences.

Subjective interpretations of fictional artefacts will, at all times, show anomaly as users view objects through individually polished lenses. What some users view as a rich fictional narrative laced with enchanting nuances of uncertainty and dilemma, others

*Users view, and experience, objects through individually polished lenses.*

will experience simply as ambiguous and ill-defined rubbish. It is, therefore, particularly unrealistic for designers to boldly assume that the nature of the relationships that users establish with their design offspring may – in all cases – be finitely directed and governed, such as a well-crafted musical or art-house movie.

### **Phantile drives**

Designers are meaning-makers. Just as a chef might add a minute trace of balsamic vinegar to a reduced tomato sauce, the designer is continually seasoning and adding depth to the consumable experiences driven by designed objects and experiences. In the context of consumer products,

we will refer to each of these flavours as a 'phantile drive' (PD). PDs are like hidden motors – or meaning-makers – deeply embedded within any given product's semiotic make-up. They are flavours waiting to be tasted and sensations awaiting the senses. Upon activation (perception), a PD will reveal itself, forcing the mind of the perceiver to pump for meaning. It is for this reason that the drives are described here as phantile since they are largely unseen. PDs are silent meaning-generators that render matter meaningful – mirrors raised at random moments during interaction, enabling the consumer to view brief flashes of their own particular existence.

We pick up brief reflections of self and identity through PDs buried deep within a product's layers of signification. A PD is like a motor that generates meaning once perceived and is phantile in the sense that it is both metaphysical and deeply suggestive. As discussed earlier, each of us perceives these drives through a unique and individually polished looking glass, which adds further to the inherent spontaneity of the PD itself. Within any product, the PDs are already set in place; all that is needed to activate that awaiting network is the unsuspecting user.

As users, we are subconsciously intertwined within an immeasurable number of meaning networks at any given time and remain largely unaware of their presence in our lives. Once discovered, a PD will be revisited with the consumer expectation of a repeat performance. Premeditated reward-seeking behaviour such as this is universal to our species and can be found in most forms of interaction. At first, we

*Designers are meaning-makers.*

*Phantile drives are hidden generators of meaningful response.*

might see this pattern simply as learning, the natural development of knowledge that occurs as a direct result of interacting with the world.

### Omnipresent phantile drives

PDs are frequently deployed to generate eye-opening jolts and quirky surprises, like the 'hello' greeting on a hi-fi display. Gimmicks such as these exemplify one way of working with PDs. They deliver an opening jolt of reasonable intensity, yet somehow fail to sustain wonderment through the passing of time due – once again – to the PD's inability to sustain its fiction by continuously growing and evolving. This trick works well on the shop floor, but its value is short-lived.

*Jolts and quirky surprises become redundant if not evolved and adapted.*

In advocating this approach, large corporations are failing to consider the longer-term impacts that repeatedly disappointing their customers will have on the brand as a whole. These factors place the possibility of customer loyalty and repeat sales in jeopardy as they gestate lasting negative consumer perceptions of a given brand.

It is crucial that we learn to see beyond initial sales targets and address deeper issues of product longevity. One thing is certain: inert PDs are incapable of sustaining a relationship. They deflower quickly and therefore have no real life expectancy. The drives must adapt, enabling them to continually dance around the deflowering gaze of the user while deceptively concealing their entirety.

When speaking of deception, Plato believed: *everything that deceives may be said to enchant*. If we apply this philosophy to the designing of PDs, we can see that both knowledge and understanding are to be considered agents of destruction. Therefore, PDs must attempt to sidestep the deflowering gaze of the consumer, maintaining enchantment while never actually being discovered. Enchantment itself may be managed in numerous ways; however, the art of deception and surprise might well be the most potent delivery system in this instance. As discussed earlier, the ability of a given product to continually amaze is largely subject to its ability to conceal, holding a few cards up its sleeve as it were, in order to avoid total discovery and to subsequently stay ahead of the game.

*That which deceives may be said to enchant.*

To date, enchantment has been dealt with largely as a means of selling units, giving products a fantastic *trick*, which – like a magician – commands wonderment

within onlookers. However, this one-trick approach to product design is of a dangerously short-term nature and is certainly not psychologically or emotionally durable. It creates great disillusionment and disappointment within users and generates animosity within the subject. To repeatedly enchant, a product must first possess an ability to grow and change. If anything, a product's ability to enchant must increase, not decrease. Having it in your life should be a rich and fruitful journey, an unfolding process of punctuated revelations that accumulate over time.

Omnipresence may be exemplified well by the PD that delivers the jolt in a jack-in-the-box. Its single function can never be effectively predicted; it even uses the guise of a clown to intensify the notion of deception. Yet, despite having only one clear function, a child will sit for hours enduring shock after shock without experiencing any disillusionment or alienation. This is because the jack-in-the-box utilizes fiction. It is a deceiver whose secret lies in the unpredictability of an apparently predictable behaviour. It is almost impossible to predict as each time you wind it up the resulting jolt will – almost always – come at a slightly different time. By continually nurturing uncertainty within the user, the jack-in-the-box captures the full attention of the onlooker. This is a relationship founded on unpredictability and partial – or fuzzy – control. The PD may, therefore, be described as possessing a perceivable omnipresence, like a computer game that you cannot quite complete but that keeps you caught within the tantalizing hook of consuming it.

Omnipresent phantile drives situate consumer consciousness deeply within both immediate and intuitive loops of control and feedback; the game of ping-pong illustrates this notion well. In ping-pong, the phenomenon of procedural growth – or learning – is particularly prevalent. Once in progress, the game quickly becomes an anticipatory dialogue between two players, the ball's trajectory representing an information flow with a jolt occurring each time it is struck. Like an improvisational dance, both players attempt to flex and sway in reaction to one another, keeping the motion alive and the dialogue thriving. The overall concept of ping-pong is, of course, to overcome one's opponent; yet the unpredictability that underlies the actions of the other seems to

*A product's ability to enchant must increase, not decrease.*

*Like an emergent dance, ping-pong players sway in reaction to one another.*

guarantee the sustainability of the game by keeping the interaction sufficiently varied.

With novelty comes a voyage into the unknown, a disrobing of the mystery that surrounds it and the consumption of the unfamiliar. As described by MacKay in *Information Theory*, when discussing noise, 'at

what point does music become noise?<sup>20</sup> If a monotonous tone is allowed to continue unchanged, we withdraw attention from it and – on an unconscious level of cognition

– the noise disappears. The PDs embedded within the semantic layers of products must also vary the jolts they deliver if they are to avoid predictability and the subsequent withdrawal of the user's attention.

In today's overburdened world of people and things, it is rare to witness such mutual interaction as the majority of products elicit shallow levels of experience, which promptly transform wonder and enchantment into drudgery and frustration.

What we really crave are evolutionary relationships – two-way engagements that enable the self to continually perceive its own image through an ever-evolving mirror.

If a monotonous tone continues unchanged, we withdraw attention from it.

We crave ever-evolving mirrors, through which we might experience the self.

## Space

Incorporating a measure of space within products supports the designing of omnipresent phantile drives. The term 'space' is used here in the Taoist sense, in which space might denote a positive and much-valued presence of nothing, rather than the Western concept of space denoting a negative absence or void-like emptiness. It is what shadow is to light and what silence is to noise. The key point here is that space does not mean *nothing*. For example, Japanese audiences, when attending a classical concert, remain silent during the quiet pauses between movements. A Western audience, however, tends to perceive these silences as a pointless void in which the throat may be noisily cleared.

We must begin to exist in greater appreciation of these spaces and shadows. Another example of this might be traditional Chinese landscape painting, in which vast expanses of white parchment are left untouched, unpainted. To the artist, these negative spaces are deemed equally important and play a vital role in balancing the

composition while providing areas of contemplative space for the onlooker to dwell within.

When regarded in this manner, space naturally takes on spiritual connotations. It becomes difficult to understand as it grates harshly against the Western model of progress and accountability, in which we must always be doing something and be able to represent our endeavours in a corporeal way. It takes supreme confidence and intelligence to not say and not do; yet this is frequently perceived as inertia and time-wasting. To find beauty in nothingness and the tranquillity of negative space is a true gift. With increased familiarity and exposure, this lesson could begin to infect the consumer psyche, nurturing an appreciation of the art of not doing.

### **Foreignments, placebo realities and jolts**

Change itself has a stimulating influence as it forces us to examine *foreignments* – to probe into the unknown in search of fresh information. Foreignments may be generated – or driven – provided the difference in a given network of meanings is only partially modified. Total difference will effectively place the network beyond perceivable recognition and, in so doing, will alienate users through an absence of lucid understanding and familiarity. As discussed in [Chapter Five](#) (p. 115–16) when describing the work of Donald Norman, a ‘just noticeable difference’ (JND) is crucial if we are to develop relationships both incrementally and sustainably. This is, of course, how growth manifests itself, in steady micro-steps that only begin to show their presence through the passing of time. JNDs must be delivered and experienced by the user at a digestible rate in order to sidestep the trash-mongering onset of alienation. Periodically delivering a series of punctuated disruptions to the narrative provides an effective means of sustaining a connectedness between the subject and the object and, in doing so, greatly increases the potential longevity of the relationship that follows.

Film director David Lynch has developed a mastery of the delivery of such foreignments and their subsequent jolts, creating fake – or placebo – information flows that artfully fabricate credible portrayals of normalcy. Once crafted, Lynch proceeds to deconstruct this assembled sense of security. In *Blue Velvet*, we find ourselves within a world that is so absolutely ordinary it is almost strange, a kind of proto-normality, if you will.<sup>21</sup> However, all is not what it appears to be; this skillfully constructed placebo provides Lynch with the perfect foundation upon which to



**Figure 6.2**  
**Reunification cutlery**

*Disparate pieces of unwanted cutlery were collected and either gold-plated or black-chromed then dipped into enamel paint to create a new collective meaning.*

Source: Pascal Anson, 2005

Photographs by Mark Vessey

construct his jolts, and indeed he does. Although Lynch, like so many artists, has developed a compelling flair for the nurture of deception and misdirection, the principles that he deploys are based simply on creating information flows and then suddenly shifting those flows at opportune moments.

Electronic products frequently portray a similarly deceptive guise; highly intelligent self-sufficiency is communicated by their lack of controls and minimal user interface, intended, of course, to increase the intensity of amazement when the product eventually does performs its wonders. This jolt forces us to question how something so simple is able to achieve so much. It is comparative in principle to minimalism. An example of this can be found in the ironic arrogance put forward by the nouveau riche in their apparently spiritualized and uncluttered loft abodes containing nothing but a bowl of dry rice and two smooth pebbles. In reality, a capitalist heart beats from behind the sleek sliding panels and concealed attic storage hatch, where products hoarded in their multiples are sheepishly hidden from view.

This is, of course, a natural state of being and is no different from putting on your best shoes to go out on a Saturday night or, perhaps, checking your hair in the hall mirror before answering the door to sign for a parcel. People show different sides to their personality depending upon whom they are talking to. We are subject to mood swings, and sometimes we just have off days where everything looks and feels wrong. All too often we see documentaries in which North American suburban residents utter, in deep shock, how seemingly normal the recently convicted serial killer from next door but one seemed.

So frequently in daily life we are jolted in a manner similar to this and, subsequently, are required to reconstruct our assumptions and generalizations about the way in which things are in this complex and unstable world. These wake-up calls serve to remind us that things are seldom what they seem. This is perhaps one of the great strengths of the jolt and, certainly, where great design potential lies. Jolts challenge our preconceptions and, in so doing, wake us from the trance, encouraging us to re-evaluate and update our assumptions about a given thing. This is a vital sociological practice to engineer, as such regular acts of reappraisal ensure that our values and assumptions about the ever-changing world continually update and adapt.

*Jolts disturb assumptions, and  
can wake us from the trance.*

No two users will perceive the same jolt – or PD – in the same way. The degree of self-projection that PDs allow, therefore, is influential to the extent that jolts are experienced as individual and self-reflective. By allowing the PDs to be experienced as personal, the jolts that result are, effectively, unique.

*No two people will perceive the same jolt in the same way.*

Mass-manufactured objects in possession of this degree of subject–object intimacy are indeed rare, and they have yet to find their way into the mainstream. That said, conceptual design proposals that endeavour to embed these values are of vital importance, as they serve to illustrate the potential for richer and, perhaps, more meaningful engagements with the made world. They also tend to point out through their own efficacy that so many jolts are, in fact, overcooked; products emerge from the shop floor so pregnant with meaning, so overloaded with prescribed values, that they leave no room for the identity of the user.

# chapter

## seven

### real-world feasibility

*Product attachments foster brand attachments; longer-lasting products connect producers with customers through reflexive cultures of service, upgrade and repair.*

#### The vision

Imagine a world in which humans and objects coexist, living out epic tales of adoration, love and, above all, empathy – a sensual realm wherein the walls erected to separate flesh from polymer crumble, giving way to a lawless and unsupervised consumer future. Imagine a world in which the born and the made – people and things – develop a oneness that finally enables them to coexist over vast periods of time in complete symbiosis. Imagine a world in which products are designed to support the investment of emotion – cher- ishable products, appliances and tools that not only sustain but also amplify sensations of attachment. Imagine a world in which technological modernity is not the

*Imagine a world in which technological modernity is not the sole value indicator.*

sole value indicator and products may triumphantly bear the scars of age. This is a consumable future in which potent emotional attachments proliferate and distinctions between subject and object become blurred. Imagine a world in which the new economic system does not equate quality of life with quantity of production, but in which successful partnerships, degrees of empathy and sustained emotional attachments are the new performance indicators. Finally, imagine a world with less waste, minimized pollution and reduced resource depletion in which economic interests prosper and consumers may satisfy their fleeting desires without causing further devastation to this fragile planet.

### The real world

The real world is a short-sighted place that ideas-people are habitually reminded of by those in favour of the blanket-like familiarity of a superficially understood world. It is a term that precedes a put-down, usually attempting to jam new ideas for fear of them disrupting the flow of a superficially understood world. Creative thinkers and full-time dreamers alike are commonly reminded of their detachment from the real world – as though their life up to that point had existed within some metaphysical dream; or as though it might be possible for two people to work in the same office but simultaneously exist in two different worlds, one of them real and the other not.

Although the real world serves to prompt justification of how new ideas might be successfully integrated within current working practices, it invariably behaves as an impervious obstruction to change and progress in an age where both are absolutely vital to our future survival. There is also a monetary agenda with the foundations upon which concepts of the real world are precariously constructed. Developed-world societies tend to measure success with wealth. Thus, the so-called real world only values sustainable design strategies when they support economic growth. Sadly, the real world will always be a place with economic accountability as its key entry requirement.

A formal discussion on what constitutes reality would normally follow at this point. However, in truth, we each occupy our own world, our own handcrafted version of reality in which all makes perfect sense – to us anyway. Concepts of reality are described here as being ‘handcrafted’ by the self; upon cognition, each of us filters information about the world based on our

*We each occupy our own ‘real world’, which is personal to us.*

prior knowledge of it. Memory is also used to further modify the information we hold in order to craft an ever more distorted interpretation of actual reality:

The senses do not provide access to absolute truth. Experiences only take on meaning through personal memories, personal belief structures and personal choices. My environment is not what I see, hear, feel, smell or taste. And even then, I am the one who gives meaning to it all. I am the scriptwriter of my world. I give reason and meaning to that world and everything that happens within it. In giving that meaning, I create my world.<sup>1</sup>

Meaning is not something self-sufficient that lurks dormant within the semantic layers of an object until someone accidentally notices it, nor can it be universally designed or programmed. Meanings are created between people and things, and although designers can endeavour to create and trigger meaningful sensations within users, the explicit nature of those meanings is largely beyond the designer's control. This is because users will contort, bend and modify meaning until it fits neatly into their own construct of reality; meanings are unconsciously customized by each user in their own particular way to create bespoke renderings of a formerly mass-produced meaning. It may therefore be said that 'the only difference between designer and user is that the designer has made a career of creating meaning'.<sup>2</sup>

Designers trigger meaning by presenting users with provocative scenarios from which meaning may be unconsciously recognized and extracted through cognitive engagement. These meanings will then be contorted – bent out of all proportion – until crafted to a point where they accurately support the user's perception of self. For example, when two individual people and their respective worlds collide, anomalies are quickly identified that can either be embraced as inspiring and new, or rejected as misguided, incompatible and obtuse. Normally, the latter prevails as we generally seek companionship from like-minded individuals whose presence in our lives serves to reinforce our own fragile concept of how things really work in the world. This is why groups of friends are often seen in cafés, slow-nodding their way through one another's anecdotes to show that they both understand and empathize with the words and experiences of the other person.

Cynical as it may sound, friends are unwittingly hand-picked in this way, as their reassurance and empathetic support is what we really crave. When self-reflective similarities are recognized in others, two previously isolated worlds merge, each

## REAL-WORLD FEASIBILITY

world serving to reinforce – and often contribute to – the other, which in turn manifests a lasting degree of empathy between the two people. In this way, friendships are born and strong empathic unions are forged between two previously isolated entities. Analogies may be drawn here to material consumption; the acquisition of self-reflective artefacts is largely motivated by the same human search for empathy and the external reinforcement of one's individual identity as being separate from society. We seek a similar degree of existential reinforcement from the things we own as we do from the people we choose to be around.

In the broadest of terms, the real world is designated simply through popularity; it is what most people opt for and anyone who disagrees – or, perhaps, sees things in a slightly different way – is clearly not living in the real world anymore. This is, of course, a fundamentally flawed premise, as

popularity alone does not necessarily signify a degree of quality or any lasting truth. If that were the case, then the Spice Girls would still be topping the charts and

*Popularity alone does not signify a degree of quality or lasting truth.*

McDonald's would be at the forefront of everyone's eating agenda. Therefore, it can be recognized that the real world is a transient and singular concept that assumes only one correct approach and an infinite number of incorrect ones – a grossly inept model, indeed, when all that is needed is a pluralism of equally valued and constantly evolving viewpoints that generate provocative yet worthwhile debate surrounding the way in which we design the future. Sustainable design is not a set of neatly arranged and predefined formulas or legislation-driven principles, but a critical and provocative debate surrounding the way in which we intend to live with, and within, the world.

### An outdated model

In a world that is ever changing, inert strategic and theoretical models quickly become anti-evolutionary and grossly counterproductive. It is shocking, then, to recognize that the current model of capitalism is based on a pre-Industrial Revolution worldview dating back almost 200 years, in which the quantity of production equates to the quality of human life.<sup>3</sup> The prevailing view was then – and still is today – that the more we produce and sell, the stronger the economy becomes and, ultimately, the higher the standard of living that can be expected. Logical as it may at first appear, a rapidly deteriorating biosphere disproves the

accuracy of this equation simply by placing the future of human life itself in the balance:

When we objectively view the recent past – and 200 years is recent even in terms of human evolution and certainly in terms of biological evolution – one fact becomes clear: the Industrial Revolution as we now know it is not sustainable. We cannot keep using materials and resources the way we do now.<sup>4</sup>

Back in the earlier days of the Industrial Revolution, environmental awareness was minimal, to say the least, and the idea that certain natural resources were finite was practically unheard of; so the factories with their new and efficient machinery spat out unsurpassed volumes of product to the wonder and amazement of all. Production was uninhibited and raged forth to pioneer a seemingly flawless economic model – a model that would soon outlive the planet's ability to support it.

Although the way in which we conduct business today has evolved practically beyond recognition, the capitalist system that underpins the majority of corporate affairs has changed very little – stoically persisting in the belief that the measure of manufacturing output somehow equates to that of societal well-being and that a booming economy serves to testify that all is well in this part of the world. It is, therefore, particularly ironic that this same system currently regards the environmental fallout of production and consumption – such as toxic waste, dwindling natural resources and global warming – as a secondary issue of relative unimportance; surely these issues are equally relevant, if not more so?

*Levels of manufacturing output do not dictate levels of human well-being.*

The underlying premise of sustainable development can be distinguished as a societal process in which ecological limits are both recognized and respected. It is quite clear that current economic practices do not do this; so to what extent can we claim to be pursuing sustainable development when the economic system upon which all commercial activity is founded remains largely blind to it?

Having a fluent economy that affords ceaseless developed-world creature comforts, while commanding that familiar measure of global authoritarianism to which we have become so accustomed in the developed North, is important to many. After all, economic affluence is not necessarily a bad thing in and of itself; however, it does come with a need for greater ethical awareness and ecological responsibility.

## REAL-WORLD FEASIBILITY

The world's handful of economic superpowers consume far more than their share of natural resources, transformed through the process of production and consumption into vast quantities of waste.

The excessive consumption of the US, for example, has a catastrophic impact on the planet as a whole. With a world population of approximately 4.7 per cent, it manages to consume nearly a quarter of the world's resources; while the industrialized world takes a massive 80 per cent share of the natural resources consumed today to supply a mere 20 per cent of the world's population.

A number of large corporations are beginning to see their responsibilities running throughout the entire product life cycle, and many have set competitive goals for enhancing the sustainability of their operations over the coming years. Whether these changes are motivated by a genuine concern for ecological preservation or simply to accommodate forthcoming environmental legislation remains to be seen. *Sustainability and profitability are compatible.* Perhaps their motivation should not be of concern; the important thing is that attitudes are slowly beginning to change and this can only be beneficial in the long term. Economic success and environmental sustainability can no longer be dealt with in isolation since environmental factors are an intrinsic facet of economic survival in the modern world.

Environmental sensitivity is becoming an increasingly cost-effective practice for today's future-facing corporation, both in terms of avoiding legislation breach, such as demanding take-back policies and landfill taxation, and, perhaps more so, in terms of generating capital via the creation of sustainable brand values and the positive associations that they foster within increasingly environmentally aware customers.

When considering the future extension of product lifespan, the underlying question might still be: how can the company survive if we only sell one unit per consumer? This would seem, at first, to be a valid question. To suggest that consumers should keep what they have – and for longer – grates harshly against the current model of Western capitalism. Yet in allowing consumers to develop a degree of empathy with the products they own, you automatically nurture a visceral empathy with that particular brand. The felt sense of empathy resonates deeply within consumers' perceptions of a particular corporation's core values, and this is vigorously

*Sustainability and profitability are compatible.*

*So, how can you make money by selling less?*



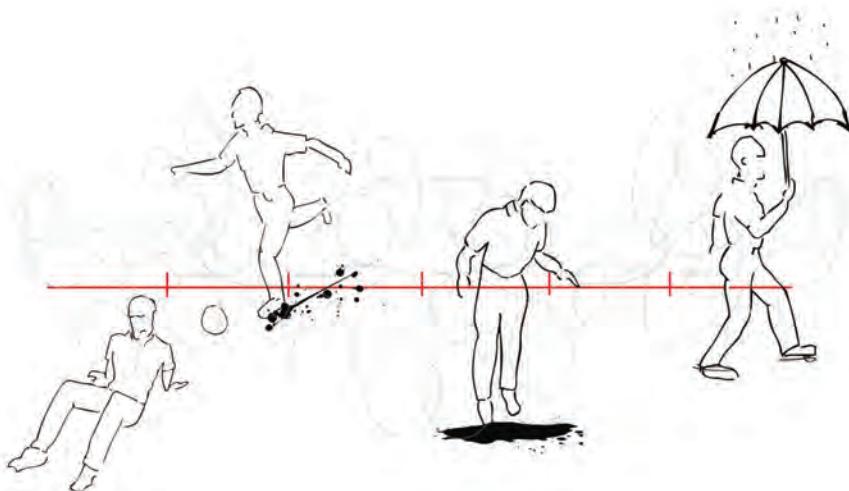
**Figure 7.1**

**Reveal sneakers**

*The shoes reveal a hidden pattern when they pick up dirt and grime, so the longer you own them, the better the product becomes.*

Source: Emma Whiting, 2012

Photographs by Emma Whiting



influential over both the intensity and longevity of relationships that consumers establish with a particular brand. It can, therefore, be seen that in terms of sustainability, the efficacy of conventional capitalism must be questioned; more lucrative models must surely exist than the blind nurturing of endless sequences of desire and destruction that are the hallmarks of Western capitalism today.

*The blind nurturing of endless cycles of desire and destruction is folly.*

### Sustainable design is unresolved

Sustainable design is a relatively new arrival on the creative scene with a great deal still to learn. For this reason alone, it must remain open to new possibilities. After all, it is quite possible that the methods through which we currently address sustainability are not as sustainable as we might like to think. As a specialized approach, sustainable design takes the wider creative industries several steps closer to an environmentally benign future. Yet despite the future-conscious ethos of this (relatively) new and ambitious design movement, there appears to be a distinct lack of innovation surrounding its below-the-line strategic methodologies. Perhaps due to the discipline's youth, present approaches seem to lack philosophical depth. It could be argued that in their current guise, the majority of methods deployed by sustainable designers today do not actually attend to the root causes of the problems we face, instead focusing almost primarily on solutions that attend to the after-effects – or symptoms – of our wasteful and grossly inefficient existence. The end result is that consumers continue wastefully forth, only now they do so with recycled materials instead of virgin ones. A dangerously liberated conscience also results, which frequently serves to stimulate even greater degrees of wasteful consumption.

*Consumers continue wastefully on, but with recycled material instead of virgin.*

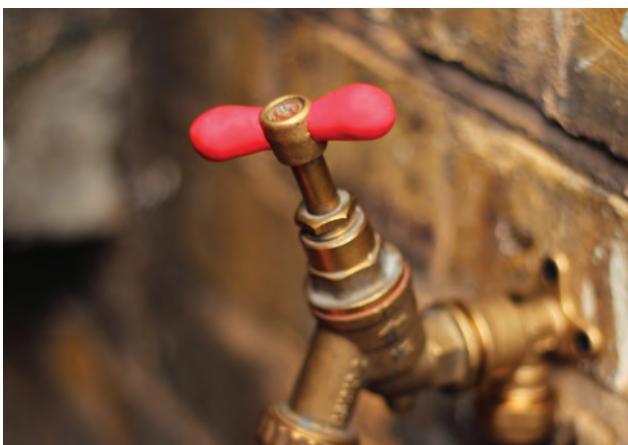
Many practitioners in the field of sustainable design will be familiar with the three Rs principle: *reduce, reuse and recycle*. The original contribution made by this uncomplicated triad was, first, to state that our top priority should be to simply reduce consumption; that means making less, buying less, using less, etc. Second, we were asked to reuse all that we could to avoid wasting materials and, of course, stimulating the need for further manufacturing of replacement goods. Third, and finally,

we were asked to recycle, but only when the previous two options of reducing and reusing were unattainable. During recent years, this golden principle has pretty much gone out the window; recycling has been boldly promoted to the number one slot, while its relegated counterparts – reduce and reuse – are now seldom discussed, let alone implemented.

Through fixing, we generate agency and autonomy, and we empower people to seize back control of their material worlds. Yes, it reduces waste and cuts consumption, but fixing is about more than that. Indeed, the act of fixing is a form of design intervention that both restores value and creates new value through the process of engagement. Beyond a technical skill, fixing may also be described as a way of thinking, a state of mind, that connects us in a more direct way with the made world. The group Fixperts take this a step further by connecting designers with owners of broken or dysfunctional products. Together, they work up fixes and solutions that overcome the problem but often enhance the overall functionality of the product in the process. They believe that fixing is a valuable creative and social resource, and through their research and engagement with this issue, they now know that people all over the world feel the same.

Commercial servicing and repair does exist. After all, if your washing machine breaks, you get it fixed – right? If your car doesn't start, you phone a mechanic. With clothes, there are also repair services on the high street (or, more commonly, just off the high street and down an alley). Skilled individuals will carry out repairs and alterations to clothes for you, often while you wait. But, oddly enough, very few people engage with this type of service, preferring instead to dispose and repurchase. If your Barbour jacket loses its finish, or gets torn on a barbed-wire fence, you return it to Barbour who will re-wax it and repair the rip. Then, six weeks later, your old jacket arrives through the mail, but it kind of feels like a new jacket – it's reborn.

Governmental legislation often serves to drive recycling initiatives, rather than reuse or reduction strategies, as recycling is more immediately compatible with economic growth in its current form. In addition, recycling is a commercial activity in itself, paying the wages of a fast-growing national workforce while making an equally fast-growing contribution to the national economy. Although alignment with commercial and economic systems is a relevant consideration, it must certainly be questioned as to whether it is wise to give recycling the prominence that it currently enjoys. As discussed earlier in this book, recycling is not a one-stop solution to



### Figure 7.2

#### Sugru

*This self-setting rubber allows you to fix, modify and improve your stuff, turning fixing into a more expressive and experientially rich process that anyone can do.*

Source: Jane Ní Dhulchaointigh, 2003

Photographs by  
FormFormForm

sustainable production and consumption, and it is essential that consumers are not misled into believing that it is.

In addition to a predominantly symptom-focused approach, sustainable design also possesses a slightly anthropocentric persona that occasionally obstructs progress by serving the interests of human activity before those of the biosphere. In instances such as these, it must be questioned as to whether we are actually sustaining the environment or just its economic viability. The recycling of plastics, for example, is largely motivated by a concern for the diminishing natural resource of oil. We have been educated to believe that when the planet's reserves of oil dry up – as they eventually will – ecological tragedy awaits us; but does it really?

A true friend of the Earth might argue that the end of naturally occurring oil will bring a similar end to the petrol-guzzling motor car since without oil there can be no petrol, forcing us to develop alternative means of locomotion, such as hydrogen-powered cars. This certainly does not mean that recycling is a counterproductive endeavour, or even that we should abandon recycling and become as wasteful as possible in order to hurriedly bring about the aforementioned changes. Rather, sustainability is a complex issue in need of constant reappraisal. If the focus of this debate were whether to switch materials from plastic to wood, for example, recycling would suddenly become a matter of paramount importance.

We are all familiar with the devastating impacts of deforestation, and any design strategy that reduces the unsustainable felling of trees must be supported wholeheartedly. Apart from the rich array of biodiversity they support, trees make up a large percentage of the planet's natural air filtration system, and so without them, we have a problem. The consumption of timber, paper and card also contributes massively to deforestation, and effective recycling initiatives in this material area alone make a dramatic contribution. It may be stated, therefore, that although recycling is anything but a one-stop solution to sustainable production and consumption, it does make one single great stride in the right direction, taking us a little closer to an efficient and more sustainable future. It is also worth noting that the recent shift in public attitude that makes recycling possible is considerable. This public readiness

*Are we actually sustaining  
the environment, or just its  
economic viability?*

*Is running out of oil really such a  
bad thing?*

## REAL-WORLD FEASIBILITY

to embrace sustainability can only be seen as encouraging for sustainable designers as it indicates a societal sympathy for ecological issues along with a participatory willingness to get involved and explore new means of material engagement.

The way in which we both discuss and name our practice also needs resolving and fast. Large amounts of time and energy are spent attempting to define whether what we do is design for environment, eco-design, sustainable design, design for sustainability, low-impact design, green design, social innovation, clean design, and so on, and so on. As with most things, this is a matter of opinion; but does it really matter what we call it? Of course, some terms are more helpful than others. ‘Clean design’ is attractive to industry because it shrugs off the baggage that seems to accompany words such as ‘green’ and ‘eco’ – the very sounds of which conjure lucid visions of an ascetic lifestyle or a barren existence defined by sacrificial non-enjoyment. Many practitioners are beginning to believe that there should be no such thing as sustainable design, claiming that it is wrong to departmentalize environmentally aware design practice as it should simply be integrated within conventional design practice without ceremony. Essentially, catering for the needs of the natural environment is simply another element of good design.

The word ‘sustainability’ may be too vague to be of any real value; it is an umbrella term that attempts to encompass all activities geared toward reducing the negative social and environmental impacts of contemporary life. In real terms, for a system to be classified as being truly sustainable, it must possess the ability to be maintained indefinitely. Due largely to entropy, none of our current strategies even closely align with this description; energy is always lost somewhere in the loop. Furthermore, the term ‘sustainability’ wrongfully implies that we should nurture the planet, just as a gardener tends their plot. It may actually be counterproductive to see our role on Earth in this way as the Earth does not belong to us, nor does it need nursing like some sick puppy. It just wants to be left well alone so that it can get on with the slow and arduous task of replenishing itself. We are simply just another species living on this Earth, and it seems obvious that an end to our days will eventually come. On the vast timeline stretching from the moment of creation – known as the ‘Big Bang’ – to the present day, the human species is but a mere pinprick, nothing more than a blip.

*The Earth does not belong to us, nor does it need nursing like some sick puppy.*

In some ways, heroically attempting to 'save the environment' is like breaking someone's leg and then offering them a lift to the hospital. We caused the damage, and although we should, indeed, be doing all we can to put it right, there is absolutely nothing noble or righteous about it. It is time to stop regarding sustainable design as some kind of ethical crusade or self-sacrificial gesture. Essentially, sustainability is a long-term journey that aims to seek out more efficient methods for us to live on this planet and serves to meet social, economic and environmental interests. Yes, recycling waste makes a valid contribution to the preservation of resources, while also reducing waste; but we could be doing so much more.

Sustainable design should not simply be a question of recycling, disassembling unwanted products and designing biodegradable waste; the potential is far greater than this. Approaches such as these are wholly symptom focused, and they sorely neglect the actual root causes of the environmental problems we currently face. We must not be lulled into a false sense of security simply because we now have these methodologies, closing the book and essentially bringing the sustainable design debate to an end before it has even begun. We must develop an understanding of the actual drivers that underpin our wasteful consumption crisis if anything like an ecologically sustainable design culture is to develop.

Despite the complexity and numerous hypocrisies that underpin sustainability, one thing is certain: a sustainable design culture that practises more than just recycling, energy efficiency and design for disassembly must be nurtured. Well-intentioned approaches such as these should be seen as essential components of efficient production and consumption, and they should be practised universally regardless of any environmental claims or ethical righteousness. As a creative discipline, sustainable design is most certainly unresolved and must continue to delve deeper still to the very root of human consciousness, as this is exactly where both the problems of and the solutions to what is essentially a man-made environmental crisis lie.

### The cost of environmental unawareness

The days when large corporations were in a position to choose whether or not to jump on the sustainability bandwagon are finally coming to an end. Sustainability is a mounting imperative, and one that will only continue to grow over the years to come. In terms of sustainability, an industry-wide shift in attitude has been steadily

gathering pace over the past few decades; this attitude shift may, of course, be attributed to the awakening ecological consciousness of society as a whole. In this way, industry is essentially updating its practices in order to comply with the changing demands of the consumer. At present, the majority of large corporations make changes only when they have to, as business attitudes are predominantly legislation driven.

Legislation is a crucial component in bringing about necessary changes in commercial attitude, although it must be said that legislation itself seldom attends to consumer-side issues. It is primarily industry focused, and it is somewhat neglectful of the pivotal role played by users in the quest for a more sustainable future. Legislative policies generally serve as ‘very broad, non-prescriptive policy tools that push the industrial system in the desired direction, without trying to define the end-point, either organizationally or technologically’.<sup>5</sup> They also tend to leave design out of the loop by adopting the role of watchdog to industry, policing the sustainability of industrial processes rather than that of the entire cycle consisting of design, manufacture, consumption and waste.

Nevertheless, mounting legislation continually turns up the heat on industry, and never more so than today; the resulting pressure on industry to be ecologically accountable is increasing fast. Manufacturers, in particular, face great financial loss by being ill-prepared for ensuing legislation, both in terms of the asset-crippling fines that result from failing to meet new standards and, perhaps more crucially, by making way for competitors in both domestic and export markets whose products have greater environmental appeal. It is, therefore, imperative that we – as a creative industry – pioneer new ways of working in compliance with forthcoming legislative demands, ways that empower industry to act with the degree of freedom to which it has become so accustomed, while avoiding the costly breach of environmental legislation. Without adequate preparation, companies will find themselves desperately struggling to keep up with the changes that will soon be upon them; as a result, huge financial penalties resulting from the breach of new environmental legislation will swiftly bring about their economic collapse.

As discussed earlier, today’s prevailing industrial model has a tendency to perceive production as a linear process of resource extraction, manufacture and sales, with little or no consideration given to events that occur afterwards. It may also be said that product life is currently of little concern to the majority of industrialists, provided that when the time does come to replace the product, customers come

back and brand loyalty is sustained. However, times are changing, and consumers are becoming increasingly aware of the social, environmental and personal implications of their purchasing decisions. The majority of consumers today claim to favour products with clear and well-communicated environmental benefits. Many state they would normally choose these over competing products:

Three-quarters of the people polled in the UK say that they would make a choice of products on a green or ethical basis, and 28 per cent say that they actually have chosen or boycotted a product or company for ethical reasons over the past 12 months.<sup>6</sup>

These figures indicate that the future survival of many large brands will become increasingly dependent upon both the delivery and perceptibility of environmentally conscious practices and products. Positive and lasting associations with a given brand can be forged in this way, and these associations are intensely influential over the buying decisions of most consumers: '86 per cent of British consumers say they have a more positive image of a company if they see it doing something to make the world a better place.'<sup>7</sup> Furthermore:

A survey by Gallup found that nine out of ten consumers would make a special effort to buy products from companies trying to protect the environment. Surveys by Nielsen and at Oxford University found that two-thirds of consumers say that they would pay more for products with environmental benefits.<sup>8</sup>

A number of forward-facing corporations have begun to grasp this concept, and to surprisingly successful ends. Already ahead of a number of its corporate rivals, domestic electronics giant Sony has adopted a highly committed environmental stance, particularly when it comes to new product innovation, packaging and energy efficiency. For example, Sony recently achieved less than 1 watt standby power consumption for a large share of its products, Sony camcorders now use completely lead-free solders and all Sony packaging now deploys recycling technologies to ensure the optimal balance between material consumption and product protection. They also have a number of product recycling initiatives in operation throughout the world, along with an exciting new refurbishment programme that aims to extend the life of some higher-volume goods, such as digital cameras and mobile phones. It can, therefore, be said that Sony is definitely doing its bit for the environment;

however, when faced with such a receptive consumer marketplace, could it actually be doing more?

The majority of consumers would not initially associate Sony with sustainability, as most consumers are largely oblivious of the great lengths that Sony is actually going to. Of course, Sony made a conscious decision to keep quiet about their environmental agenda, choosing instead to discuss it within a fairly dry and *de rigueur* environmental report that can be found buried within the depths of their vast corporate website. This approach to sustainability is not exclusive to Sony; numerous other corporations of a similar size and stature go to considerable lengths to continually revise the sustainability of their operations, yet few consumers will ever hear of it. It is commonly assumed that talk of sustainability will induce a sensation of compromise within potential consumers, particularly in relation to the digital product genre where all is supposed to be shiny and new. However, ample evidence exists to clearly indicate otherwise.

Sustainable design – and the broader issue of sustainability as a whole – must cease to be regarded as a whimsical marketing strategy or some value-adding afterthought. Environmental sensitivity is the very foundation that must underpin any corporate visioning in an increasingly ecologically aware marketplace. It can reinforce brand values while empowering companies to act freely without continual bombardment from asset-crippling fines resulting from legislative breach, which are usually followed by an image-bruising aftershock of negative press. Times are changing, and significant conceptual shifts are greatly needed in the way in which we regard environmentally aware business practice. We now know that sustainability is compatible with economic growth, and we should begin to push this notion forward with far greater confidence. Clearly, the very concept of sustainability has accumulated more than its fair share of baggage over the past few decades and comes loaded with preconceptions. Despite this, we must persist in driving the debate forth and pioneering new ways to sustain both the economy and the deteriorating natural environment upon which it so precariously rests.

There are numerous indications that environmental considerations percolate through finished products into the consumer psyche, creating positive brand associations. It may, therefore, be said that brand loyalty is facilitated, in part, by a corporation's ability to clearly communicate sustainable brand values through the delivery of

*We associate powerfully with brands that are doing something positive.*

environmentally conscious products and services. When engaging with products of this nature, consumers feel that they are investing in a good cause and their consumption is, in some way, helping to make the world a better place. This process also provides individuals with a means of associating themselves with these positive values, which reinforce their identities in favourable ways.

In direct contrast to this, loyalty to a particular brand is also threatened when businesses neglect and abuse their environmental responsibilities. The damage caused by this behaviour is beyond measure as it comes with a substantial aftershock of negative brand associations that linger in the consumer psyche for an eternity. These lasting negative associations can be so potent that consumers may cease to invest in certain branded products or services, switching instead to a competitor's brand in search of a new relationship. Not only have loyal customers been driven away, weakening the company, but they have gone to the competitor, strengthening the other side. Market share is lost and a firm monetary body blow is dealt that will take some time to recover from.

When one considers the vast sums of money that large corporations invest in marketing, public relations, advertising and a host of other edge-giving services to engender positive brand values, it becomes a remarkable oversight for the same corporations to demolish these painstakingly constructed values in a single environmental blunder. If for no other reason than to sustain market share, it is of critical importance that the decision-makers of large corporations begin to recognize the impact that their environmental agendas have within the hearts and minds of the consumers who, essentially, keep them in business. Sustainability affects us all, regardless of our ethics or political stance.

The steady increase in legislation such as 'product take-back' policies and 'landfill taxation' is already beginning to engage designers in re-evaluating the importance of product life consideration. At present, products designed for take-back are generally geared toward economical disassembly and recycling/reuse, but they can still come at a cost to producers. As a result of this legislation, waste generated by the current model of consumption will soon render it an economically detrimental practice. Failure to accommodate the demands of environmental legislation in future concepts will incur added costs, making it a dangerous thing to ignore. Indeed, legislation

will come and go and will naturally evolve and change over time, as with all things political. Yet although the nature and focus of environmental legislation will change over time, the fact remains that it will always exist, and therefore designers need to begin acknowledging it as a relevant design criterion in the ever more sustainable marketplace of the future.

Although a major step in the right direction, complying with legislation alone is simply not enough; designers must pioneer new ways of working in compliance with increasing legislative demands without compromising creativity or commercial edge. It is commonly perceived that embracing environmental factors is to compromise, or to do without. The way in which sustainability is perceived must, therefore, adapt from the sacrificial low-tech, beige and crusty world it has inhabited in recent years, to a multi-tech discipline of radically new and provocative creative opportunities – a chance to start over and conduct an industry-wide reappraisal of material culture. Sustainability provides us with the greatest opportunity to radically rethink the way in which we engage with our material world. Legislation provides the guidance and a persuasive schedule within which these changes need to be implemented while giving us the gentle shove that we need to get started.

*Sustainability encourages us to rethink our engagements with the material world.*

### A six-point framework

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 described as a consequence of the apparently intangible, ethereal nature of considerations pertaining to psychological function, which cause confusion for the practising product designer tasked with the design and development of greater emotional longevity in products.

An empirical study, conducted by the author, examined the relationship behaviours of 2,154 respondents with their electronic products during the use phase. Results from 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 per cent), surface (23 per cent), detachment (23 per cent), attachment (16 per cent), fiction (7 per cent) and consciousness (7 per cent). Of the six distilled

experiential themes, narrative was the most common reason, given by 526 respondents (24 per cent). It is interesting to note that of the 526 respondents fitting this profile, 341 received their domestic electronic product (DEP) as a gift. Furthermore, although 364 (16 per cent) of the sample population did possess DEPs to which they were emotionally attached, a far greater proportion of the sample frame (84 per cent) perceived value in DEPs for reasons other than emotional attachment per se.<sup>9</sup>

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, presenting a more expansive, holistic understanding of design for durability – both in terms of the paradigm and of the language used to articulate it. The six-point experiential framework (and supporting annotations) is as follows:

- 1 *Narrative*: users share a unique personal history with the product; this often relates to when, how and from whom the object was acquired.
- 2 *Detachment*: users feel no emotional connection to the product, have low expectations and thus perceive it in a favourable 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).
- 3 *Surface*: the product is physically ageing well and developing a tangible character through time, use and sometimes misuse.
- 4 *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.
- 5 *Fiction*: users are delighted or even enchanted by the product as it is not yet fully understood or known by the user; these are often recently purchased products that are still being explored and discovered by the user.
- 6 *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. The six defined pathways are enabling in their

framing of specific points of intervention, facilitating more structured, focused modes of exploration. As a collection of terms, they delineate and define an original territory of enquiry, 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 (5 February 2008) and examined by The Science and Technology Committee as a part of their Enquiry into Waste Reduction. The evidence was presented within the context of providing product designers with distinct conceptual pathways through which to initiate engagement with emotionally durable design, and the EU WEEE Directive, examining ways in which products and production processes can be made more sustainable and therefore produce less waste.<sup>10</sup>

### Producer and consumer

It was once the case that consumers were practically forgotten about post-purchase, each one being regarded on a boardroom level as just another punter, another unit sold. Thankfully, times are changing and in the sustainable marketplace of the future, selling a product and then forgetting about the customer will constitute an uneconomical and desperately short-term practice. We already know that by formulating a commercial system that enables customers to develop empathy with the products they own, you also enable a visceral loyalty with that particular brand. Products then become talking points, linking consumers to producers through ongoing dialogues regarding the families of products that unite them – remodelling corporate culture away from a temporal world of one-off sales toward a reflexive domain of relationship management that symbolizes a 'fundamental change in the relationship between producer and consumer, a shift from an economy of goods and purchases to one of service and flow'.<sup>11</sup> This remodelling can be likened to both Walter Stahel's and Michael Braungart's vision of a service economy, where consumers lease products rather than buy them.

*Empathy with products leads to empathy with brands.*

The leasing and sharing of products is on the rise, although generally motivated by convenience and affordability rather than by any great environmental agenda. Despite this, the leasing of products has distinct advantages over the conventional system of conspicuous consumption characterized so neatly by a cyclic monologue of serial buying and discarding. In the leasing model, consumers can regularly

**Figure 7.3****The optimist toaster**

*This toaster is designed to be so simple that there is little to break. Four bolts on the base provide access to the inside where the elements simply unclip to be replaced.*

Source: The Agency of Design, 2005

Photographs by The Agency of Design

exchange and upgrade their appliances at a moment's notice in order to ensure that they always have the latest models. The cost of servicing and repair is discreetly written into the monthly rental fee, making it perceptively free, which in itself strips away the anxiety of owning costly and, ultimately, breakable artefacts. For the majority of consumers, the overall cost of leasing is relatively affordable, too, making it a particularly competitive option. Leased products are also attractive from an

## REAL-WORLD FEASIBILITY

environmental perspective as they are always returned to the store once users are ready to fix, repair or upgrade. It is also common for leased objects to serve more than one use; a leased DVD player, for example, may have two or three different owners in a single lifetime, while a less technologically transient product, such as a washing machine, may touch the lives of over five families during a single lifetime. When given the enormous benefits of leasing over buying, it becomes particularly odd that leasing still remains such an unpopular option.

Consumers deploy objects to designate their particular being as separate from the rest of society, and the process of owning objects and engaging with material culture enables this vital self-defining process to occur. It appears that, despite obvious advantages, leasing encounters a fundamental problem due to the psychological nature of ownership and the innate need within each of us to actually own things and designate them as ours. Consumers tend to feel that objects do not actually belong to them if they are not at liberty to throw them away the moment they feel the need to do so. In addition to this, asking consumers to essentially borrow products, and compromise the diversity and wealth of their otherwise owned material empires, is an ambitious aim:

Owning tangible things is an undeniable human need. Products provide symbols of identity to their users and the people around them. They carry meaning and are constant reminders of who we are, where we are, our activities, our history and our future.<sup>12</sup>

Objects also behave as powerful memory cues and

can remind us of our past achievements, relationships, etc., and become concrete manifestations of our personal biography. In other words, they can become extensions of our self. Functioning as our external memories, they assure us of the persistence of our identity and integrity of our being over time. Accordingly we develop strong emotional attachment to some objects because they played some part in memorable events of our past.<sup>13</sup>

Due to the current conflicts of leasing with the enduring human need for the absolute ownership of things, the bright sentiments of leasing as a contemporary industrial model might be better expressed through product life extension, upgrade and maintenance – in short, a deeper after-sales relationship between

producer and consumer that essentially enables the absolute ownership of longer-lasting things.

In 1996/7, Eternally Yours organized three meetings to discuss different aspects of product lifespan, one of which, entitled Sales 'n Service, revealed that a large number of companies are moving away from just selling products toward both fostering and maintaining relationships with their customers. Their findings indicated that 'in sustaining relations, the material product mainly serves as a conversation piece that keeps on generating turnover for years after its birth'.<sup>14</sup> Eternally Yours refer to this period as a 'use career', and consider this period of engagement between subject and object as the greatest means for businesses to generate further turnover, while also reducing the unnecessary volumes of production and consumption that have become so characteristic of the modern world. Turnover can still be generated long after an item has been sold, and for this reason, we should cease to recoil in terror at the very thought of extending product life. On the contrary, if revenue can be generated long after a product has been sold – without the need, for example, for further costly manufacturing, resource extraction, energy consumption,

*New economies should be based on the repair, upgrade and service of longer-lasting products.*

atmospheric pollution and waste – it can only be regarded as a more lucrative destiny for corporate visionaries to pursue. 'There are trends in the current economy which point to a "decoupling" of economic activities from its physical metabolism.'<sup>15</sup> Designers and manufacturers, therefore, should begin to see their responsibilities as spanning the whole period of time that the product is being used – shifting their focus onto maintenance, upgrade and after-sales service – rather than just at the moment of transaction in the store:

The supreme moment of transfer should not be the finale of development processes, but just the first stage. So, besides reckoning with discarding and recycling, product design includes setting up or adapting relevant services: cleaning, repairing, upgrading, transport, spare parts, information desks and, in some cases, even facilities to support shared use.<sup>16</sup>

The notion of a use career is helpful in reframing the way in which we approach the design and production of objects as it takes into account the whole life cycle of

## REAL-WORLD FEASIBILITY

objects, defining their lifespan in terms of use rather than material or component longevity. This term also incorporates the idea of a career, which is a developmental process of continual incremental growth. By developing deeper relationships with their customers, companies empower themselves by being able to continuously predict and cater for their customers' changing and growing needs. This also has deep impacts upon the consumers' perceptions of corporations' core values and the subsequent relationships that they develop with specific brands. Products serve as conversation pieces – connecting producers with consumers – to provide a timely migration away from the temporal world of one-off sales toward a reflexive and sustainable domain of relationship management, service and flow.

*Toward a more reflexive domain of relationship management, service and flow.*

What is being proposed is a partial shift in business strategy away from the temporal world of one-off sales into a new reflexive domain of relationship management. The result is a corporation that sustains market share by adapting to an increasingly sustainable marketplace in an efficient and perceptively forward-facing manner – challenging corporate, academic and professional world views to shape the future in a responsible, humanistic and meaningful way.

As always, design will play a pivotal role here; for this system to be effective, consumers must first possess the desire to hold on to their products for greater lengths of time. It is all well and good for strategists, futurologists and environmentalists to propound theories of longevity and elongated consumption cycles; but if end users have no desire to keep things for longer, ultimately, they will not. We therefore need to design products that consumers will actually want to keep, maintain and use for longer periods of time, sustaining their value to keep users hooked on consuming them. Such objects are designed for empathy and are created in an artful way, engendering powerful emotional attachments, rich evolving narratives, intense user experience and a sustained element of uncertainty and fiction.

# notes

## Chapter One The progress illusion

- 1** Burnie, D., *Get a Grip on Ecology*, The Ivy Press, Lewes, 1999, p. 78.
- 2** Jones, R., *US Insurance Industry Perspectives on Global Climate Change*, Lawrence Berkeley National Laboratory, Berkeley, California, 2001, p. 100.
- 3** Lovelock, J., *Gaia: A New Way of Looking at Life on Earth*, Oxford University Press, Oxford, 1995, p. 43.
- 4** Dubos, R., *The Wooing of Earth*, The Athlone Press, London, 1980.
- 5** Hardin, G., 'The tragedy of the commons', *Science*, 162 (3859), 1968, pp. 1243–8.
- 6** Costanza, R. 'Natural capital', *The Encyclopedia of Earth*, 31 July 2008: [www.eoearth.org/view/article/154791](http://www.eoearth.org/view/article/154791) (accessed September 2014).
- 7** Imberger, J., 'Are we moving towards sustainability?' Kirby Lecture, Moore River, Australia, 2003; [www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability\\_kirby.pdf](http://www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability_kirby.pdf) (accessed September 2003).
- 8** Ibid, p. 192.
- 9** Ibid, p. 190.
- 10** US Census Bureau, *Global Population at a Glance: 2002 and Beyond*, US Department of Commerce Economics and Statistics Administration, Washington DC, March 2004.
- 11** Worldometers, 'Current world population': [www.worldometers.info/world-population/](http://www.worldometers.info/world-population/) (accessed 4 December 2013).
- 12** van Hinte, E. and Bakker, C., *Trespassers: Inspirations for Eco-Efficient Design*, The Netherlands Design Institute, Rotterdam, 1999, p. 23.
- 13** Sessions, G., *Deep Ecology for the 21st Century: Readings on the Philosophy and Practice of the New Environmentalism*, Shambhala, Boston, Massachusetts, 1995, p. 434.
- 14** Hawken, P., Lovins, A. and Hunter Lovins, L., *Natural Capitalism: Creating the Next Industrial Revolution*, Little, Brown & Company, Snowmass, Colorado, 1999, p. 3.
- 15** Ibid, p. 2.
- 16** Burnie, D., *Get a Grip on Ecology*, The Ivy Press, Lewes, 1999, p. 40.
- 17** ES Magazine, 'Put your money where your mouth is', *Evening Standard/ES Magazine*, UK, Associated Newspapers Ltd, September 2000, p. 40.
- 18** Euro RSCG Worldwide, *Millenials: The Challenger Generation*, Prosumer Report, Vol. 11, Euro RSCG Worldwide, 2011.
- 19** Dow Jones Sustainability Indexes: [www.sustainability-index.com](http://www.sustainability-index.com) (accessed May 2002).

## NOTES

- 20** Department for Environment, Food and Rural Affairs, *Government Review of Waste Policy in England 2011*, DEFRA, London, 2011, p. 23 and p. 27.
- 21** Webb, F., 'Designing for a sustainable future', *Making It Magazine: Industry for Development* (published by United Nations Industrial Development Organization) 30 August 2013: [www.makingitmagazine.net/?p=6906](http://www.makingitmagazine.net/?p=6906) (accessed June 11, 2002).
- 22** Mont, O., *Functional Thinking: The Role of Functional Sales and Product Service Systems for a Function-Based Society*, International Institute for Industrial Environmental Economics (IIIEE), Lund University, Sweden, No. 5233, July 2002, p. 30.
- 23** Sudjic, D., *The Language of Things*, Allen Lane, London, 2008, p. 5.
- 24** UNEP (United Nations Environment Programme), *UNEP Annual Report*, UNEP, Paris, 2007.
- 25** Cooper, T., 'The value of longevity: product quality and sustainable consumption', *Global Research Forum on Sustainable Production and Consumption*, Rio de Janeiro, 13–15 June 2012.
- 26** Association of Science – Technology Centers and the Smithsonian Institution Traveling Exhibition Service, *Rotten Tomatoes* website: [www.astc.org/exhibitions/rotten/fkl.htm](http://www.astc.org/exhibitions/rotten/fkl.htm) (accessed June 2002).
- 27** London, B., *Ending the Depression Through Planned Obsolescence*, pamphlet, US, 1932.
- 28** Packard, V., *The Waste Makers*, Penguin, Middlesex, 1963.
- 29** Cooper, T., 'Durable consumption: Reflections on product life cycles and the throw-away society', in Hertwich, E. (ed.), *Life-Cycle Approaches to Sustainable Consumption*, Workshop Proceedings, Austria, November 2002, pp. 15–27.
- 30** Philips Design, *Visions of the Future*, Philips Design, Eindhoven, 1996, p. 191.
- 31** Christer, K. and Cooper, T., 'Marketing durability: A preliminary review of the market potential for lifespan labels', *Academy of Marketing Conference*, Cheltenham, July 2004, pp. 51–67; p. 62.
- 32** Royal Society for the Encouragement of Arts (RSA): [www.weeeman.org/index.html](http://www.weeeman.org/index.html) (accessed 22 June 2006).
- 33** Ibid.
- 34** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997.
- 35** Cooper, T., 'Consumers, costs and choice', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 59–69.
- 36** *Eternally Yours, About Eternally Yours*: [www.eternally-yours.nl/abouteternally.html](http://www.eternally-yours.nl/abouteternally.html) (accessed September 2001).
- 37** Thackara, J., 'The design challenge of pervasive computing', *Interactions*, 8 (3), May/June 2001, pp. 46–52; p. 48.
- 38** Manzini, E., 'Ideas of wellbeing: Beyond the rebound effect', paper presented at *Sustainable Services and Systems: Transitions towards Sustainability Conference*, Amsterdam, 2002.
- 39** Tzu, L., *Tao Te Ching: The Book of the Way*, Kyle Cathie, London, 1988, p. 122.
- 40** Silverman, H. J., *Derrida and Deconstruction*, Routledge, London, 1989, p. 85.
- 41** De Groot, C. H., 'Experiencing the phenomenological object', in Design Transformation Group (ed.), *Closing the Gap Between Subject and Object*, Design Transformation Group, London, 1997, pp. 20–1.

- 42** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 45.
- 43** Webb, F. 'Designing for a sustainable future', *Making It Magazine: Industry for Development* (published by United Nations Industrial Development Organization) 30 August 2013: [www.makingitmagazine.net/?p=6906](http://www.makingitmagazine.net/?p=6906) (accessed June 11, 2002).
- 44** De Groot, C.H., 'Experiencing the phenomenological object, in Design Transformation Group, *Closing the Gap between Subject and Object*, Design Transformation Group, London, 1997, p. 20.
- 45** Anderson, L., 'So here are the questions: Is time long or is it wide?' in Van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 19.
- 46** Lippmann, T., *Academy Lecture*, 209/2, Germany, August 1912.
- 47** Imberger, J., 'Are we moving towards sustainability?' *Kirby Lecture*, Moore River, Australia, 2003: [www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability\\_kirby.pdf](http://www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability_kirby.pdf) (accessed September 2003).
- 48** Bateson, G., *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology* (new edition), University of Chicago Press, Chicago, Illinois, 2000.
- 49** AtKisson, A., *Believing Cassandra: An Optimist Looks at a Pessimist's World*, Chelsea Green, White River Junction, Vermont, 1999, p. 200.
- 50** Treanor, P., *Why Sustainability Is Wrong*: <http://web.inter.nl.net/users/Paul.Treanor/sustainability.html> (accessed September 2004).
- 51** Devall, B., 'The unsustainability of sustainability', *Culture Change: A Project of the Sustainable Energy Institute*: [www.culturechange.org/issue19/unsustainability.htm](http://www.culturechange.org/issue19/unsustainability.htm) (accessed September 2004).
- 52** Ibid.
- 53** Wright, S. and McCrea, D., *The Handbook of Organic and Fair Trade Food Marketing*, Blackwell, Oxford, 2007.
- 54** Manzini, E., *Eternally Yours* homepage: <http://home.wxs.nl/~muis/eternal.htm> (accessed April 1997).

## Chapter Two Consumer motivation

- 1** Palahniuk, C., *Fight Club*, Vintage, London, 2006[1996], p. 44.
- 2** Nitto, N. and Shiozaki, J., 'Changing consumption patterns and new lifestyles in the 21st century', *NRI Papers*, Japan, No. 24, March 2001, p. 12.
- 3** Heskett, J., *Toothpicks and Logos*, Oxford University Press, Oxford, 2002, p. 16.
- 4** Rutherford, F. J. and Ahlgren, A., *Science for All Americans* (online), chapter 8: [www.project2061.org/publications/sfaa/online/chap8.htm](http://www.project2061.org/publications/sfaa/online/chap8.htm) (accessed August 12, 2004).
- 5** Environmental Defence Fund Advertisement, *The Christian Science Monitor*, US, 1990.
- 6** Pachauri, R. K. and Reisinger, A. (eds), *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, IPCC, Geneva, 2007.
- 7** Carson, R., *Silent Spring*, Houghton Mifflin, Boston, Massachusetts, 2002[1962], p. 15.
- 8** Cohen, M., 'Property and sovereignty', in Macpherson, C. B. (ed.), *Property: Mainstream and Critical Positions*, University of Toronto Press, Toronto, 1999[1978], p. 175.
- 9** Fromm, E., *To Have or To Be*, Abacus, London, 1979, p. 11.

## NOTES

- 10** Palahniuk, C., *Fight Club*, Vintage, London, 2006[1996], p. 125.
- 11** Online Etymology Dictionary: [www.etymonline.com/c8etym.htm](http://www.etymonline.com/c8etym.htm) (accessed August 2003).
- 12** Schumacher, E. F., *Small Is Beautiful: Economics as if People Mattered*, Harper Perennial, New York, 2010[1973], p. 34.
- 13** Bocock, R., *Consumption*, Routledge, London, 1993, p. 69.
- 14** Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 75–82; p. 76.
- 15** Palahniuk, C., *Fight Club*, Vintage, London, 2006[1996], p. 149.
- 16** Buy Nothing Day Organization: [www.buynothingday.co.uk](http://www.buynothingday.co.uk) (accessed November 1999).
- 17** Kleine, R. E. and Kerman, J. B., 'Measuring the meaning of consumption objects: An empirical investigation', *Advances in Consumer Research*, 15 (1), 1988, pp. 498–504; p. 498.
- 18** Walker, S., *Sustainable By Design: Explorations in Theory and Practice*, Earthscan, London, 2006, p. 39.
- 19** Kleine, R. E. and Kerman, J. B., 'Measuring the meaning of consumption objects: An empirical investigation', *Advances in Consumer Research*, 15 (1), 1988, pp. 498–504; p. 498.
- 20** Richins, M. L., 'Valuing things: The public and private meanings of possessions', *Journal of Consumer Research*, 21 (3), 1994, pp. 504–21.
- 21** Purbrick, L., *The Wedding Present: Domestic Life Beyond Consumption*, Ashgate, Aldershot, 2007, p. 83.
- 22** Schultz, S. E., Kleine, R. E. and Kerman, 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 (1), 1989, pp. 359–66; p. 359.
- 23** Design Transformation Group, *Closing the Gap Between Subject and Object*, Design Transformation Group, London, 1997.
- 24** Ramakers, R., 'Contemporary engagement', in Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, 010 Publishers, Rotterdam, 1999, p. 7.
- 25** Walker, S., 'How the other half lives – Product design, sustainability and the human spirit', *IDATER 1999 Conference*, Loughborough University, 1999, pp. 237–42; p. 238.
- 26** Miller, H., 'The social psychology of objects', *Understanding the Social World Conference*, University of Huddersfield, Huddersfield, 1995.
- 27** Dewey, J., *Art as Experience*, Penguin Putnam Inc., New York, 1934.
- 28** Carlson, R., *Experienced Cognition*, Lawrence Erlbaum, Mahwah, New Jersey, 1997.
- 29** Csikszentmihalyi, M., 'Why we need things', in Lubar, S. and Kingery, W. D. (eds), *History from Things: Essays on Material Culture*, Smithsonian Institute Press, Washington DC, 1993, pp. 20–9.
- 30** DiSalvo, C., Hanington, B. and Forlizzi, J., 'An accessible framework of emotional experiences for new product conception', in McDonagh, D., Hekkert, P., van Erp, J., and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 251–5.
- 31** Csikszentmihalyi, M. and Rochberg-Halton, E., *The Meaning of Things: Domestic Symbols and the Self*, Cambridge University Press, Cambridge, 1981.
- 32** Jääskö, V., Mattelmäki, T. and Ylirisku, S., 'The scene of experience', *The Good, the Bad and The Irrelevant* (Conference Proceedings), University of Art and Design Helsinki, 3–5 September 2003, pp. 341–5; p. 345.

- 33** Sweet, F., *Frog: Form Follows Emotion*, Thames & Hudson, London, 1999, p. 9.
- 34** Desmet, P., *Designing Emotions* (PhD thesis), Delft University of Technology, Delft, The Netherlands, 2002, p. 47.
- 35** Batterbee, K. and Mattelmäki, T., 'Meaningful product relationships', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 339–41.
- 36** Ibid., p. 341.
- 37** Jordan, P. W., *Designing Pleasurable Products*, Taylor & Francis, London, 2000.
- 38** Jääskö, V. and Mattelmäki, T., 'Observing and probing', *DPPI '03*, Pittsburgh, 23–26 June 2003, pp. 126–31; p. 128.
- 39** Fromm, E., *To Have or To Be*, Abacus, London, 1979, p. 26.
- 40** Ibid.
- 41** Baudrillard, J., *Simulacra and Simulation*, University of Michigan Press, 1981.
- 42** Falk, P., quoted in Koskijoki, M., 'My favourite things', in Van Hinte, E. (ed.) *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 134–5; p. 134.
- 43** van Hinte, E. (ed.) *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 48.
- 44** Maslow, A. H., 'A theory of human motivation', *Psychological Review*, 50 (4), 2000 pp. 370–96.
- 45** Thompson, J., 'More than meets the eye: Exploring opportunities for new products, which may aid us emotionally as well as physically', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2005, pp. 332–6; p. 335.
- 46** Alderfer, C. P., *Existence, Relatedness, and Growth*, The Free Press, New York, 1972.
- 47** D'Andrade, R. G. and Strauss, C., *Human Motives and Cultural Models*, Cambridge University Press, Cambridge, 1992.
- 48** Max-Neef, M., 'Development and human needs', in Ekins, P. and Max-Neef, M. (eds), *Real-Life Economics*, Routledge, London, 1992, pp. 197–214; p. 204.
- 49** Fletcher, K., 'Clothes that connect', in Chapman, J. and Gant, N. (eds), *Designers, Visionaries and Other Stories: A Collection of Sustainable Design Essays*, Earthscan, London, 2007, pp. 118–32; p. 128.
- 50** Wahba, M. A. and Bridgewell, L. G., 'Maslow reconsidered: A review of research on the need hierarchy theory', *Organizational Behavior and Human Performance*, 15 (2), 1976, pp. 212–40.
- 51** Postrel, V., 'The marginal appeal of aesthetics: Why buy what you don't need?', *Innovation (The Journal of the Industrial Designers Society of America)*, Spring 2004, pp. 31–6; p. 33.
- 52** Yen Mah, A., *Watching the Tree*, HarperCollins, London, 2001, p. 6.
- 53** Darwin, C. *On the Origin of Species* (revised edition), Oxford University Press, Oxford, 2008.
- 54** Nitto, N. and Shiozaki, J., 'Changing consumption patterns and new lifestyles in the 21st century', *NRI Papers*, Japan, No. 24, March 2001, p. 12.
- 55** Ibid., p. 13.
- 56** Ibid., p. 12.
- 57** Pollan, M., *Second Nature*, Dell Publishing, New York, 1991, p. 48.
- 58** Gould, S. J., 'Our allotted lifetimes', *Natural History*, 86 (7), 1977, pp. 34–41; p. 39.

## NOTES

- 59** White, L., 'The historical roots of our ecological crisis', *Science*, 155 (3767), 1967, pp. 1203–7; p. 1207.
- 60** Dubos, R., *The Wooing of Earth*, The Athlone Press, London, 1980, p. 10.
- 61** Lyman, F., *The Greenhouse Trap*, Beacon Press, Boston, Massachusetts, 1990, p. 25.
- 62** Feyerabend, P., *Against Method*, Verso, London, 1993, pp. 5–6; italics in original.
- 63** Wood, J., 'The culture of academic rigour: Does design research really need it?' *Design Cultures Conference Proceedings*, Sheffield Hallam University, UK, March–April, 1999.
- 64** Mont, O., *Functional Thinking: The Role of Functional Sales and Product Service Systems for a Function-Based Society*, International Institute for Industrial Environmental Economics (IIIEE), Lund University, Sweden, No. 5233, July 2002, p. 30.
- 65** Fromm, E., *To Have or To Be*, Abacus, London, 1979, p. 27.
- 66** Sartre, J. P., *Being and Nothingness: A Phenomenological Essay on Ontology*, Routledge, London, 1969.
- 67** Gregory, P., 'A four-legged friend', *Digital Home Magazine*, UK, August 2003, p. 114.
- 68** Lacan, J., *Écrits*, trans. Bruce Fink, W.W. Norton and Co., New York, 2006[1966].
- 69** Ibid.
- 70** Freud, S., *Civilization and Its Discontents*, W.W. Norton and Co., New York, 1989 [1930], p. 13.
- 71** Leader, D. and Groves, J., *Introducing Lacan*, Icon Books, London, 1995, p. 23.
- 72** Ibid., p. 127.
- 73** Crampton-Smith, G., 'The art of interaction', *Doors3: Info-Eco, Doors of Perception*, The Netherlands Design Institute, Amsterdam, 1993: [http://museum.doorsofperception.com/doors1/transcripts/cra\\_smi/cra\\_smi.html](http://museum.doorsofperception.com/doors1/transcripts/cra_smi/cra_smi.html) (accessed February 2, 2009).
- 74** Schopenhauer, A., *On the Vanity of Existence*, Scholarly Press, Michigan, 1970, p. 105.

## Chapter Three Attachments to objects

- 1** Hyper Dictionary: [www.hyperdictionary.com/dictionary/animism](http://www.hyperdictionary.com/dictionary/animism) (accessed September 2003).
- 2** Leslie, M., 'Suddenly smarter', *Stanford Magazine*, Stanford, California: July/August 2002: [https://alumni.stanford.edu/get/page/magazine/article/?article\\_id=38306](https://alumni.stanford.edu/get/page/magazine/article/?article_id=38306).
- 3** Ibid.
- 4** Ibid.
- 5** Ibid.
- 6** Ibid.
- 7** Gerasimov, D. V., *Chronology of Vegetation and Paleoclimatic Stages of Northwestern Russia During the Late Glacial and Holocene*, Institute of History of Material Culture, Russian Academy of Sciences, St Petersburg, 2002.
- 8** Achterhuis, H., 'Equality's safety belt', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 82.
- 9** Verbeek, P. P. and Kockelkoren, P., 'Matter matters', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 102.
- 10** Ibid., p. 103.
- 11** DiSalvo, C., Hanington, B. and Forlizzi, J., 'An accessible framework of emotional experiences for new product conception', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 251–5; p. 253.

- 12** Design and Emotion Society, 'Conference themes', *Design and Emotion* 2004: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php) (accessed 11 August 2004).
- 13** Freud, S., *Civilization and Its Discontents*, W. W. Norton and Co., New York, 1989 [1930], p. 13.
- 14** Schifferstein, H. N. J., Mugge, R. and Hekkert, P., 'Designing consumer–product attachment', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 378–83; p. 378.
- 15** Ibid., p. 380.
- 16** Brunner, F. M., *Consumerism and Relationships: The Psychology of Extrapersonal Relationships*: [www.hooked.net/~brunner](http://www.hooked.net/~brunner) (accessed November 1996).
- 17** Ibid.
- 18** Ibid.
- 19** Cushman, P., *Constructing the Self, Constructing America: A Cultural History of Psychotherapy*, Perseus Publishing, Reading, Massachusetts, 1997.
- 20** Brunner, F. M., *On Consumerism*: [www.geocities.com/meifania/consumerism.html](http://www.geocities.com/meifania/consumerism.html) (October 2003).
- 21** Hood, B., *Super Sense: From Superstition to Religion – The Brain Science of Belief*, Constable, London, 2009.
- 22** Brown, R., *Social Psychology* (second edition), The Free Press, New York, 1986.
- 23** Ramakers, R., 'Contemporary engagement', in Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, 010 Publishers, Rotterdam, 1999, p. 7.
- 24** UNDP (United Nations Development Programme), *Human Development Report 1998*, Oxford University Press, New York, 1998, p. 2.
- 25** Shah, A., 'Behind consumption and consumerism', *Global Issues*: [www.globalissues.org/TradeRelated/Consumption.asp](http://www.globalissues.org/TradeRelated/Consumption.asp) (accessed May 2003).
- 26** Van Nes, N. and Cramer, J., 'Influencing product lifetime through product design', *Business Strategy and the Environment*, 14 (5), 2005, pp. 286–99; p. 297.
- 27** Searles, H. F., *The Nonhuman Environment*, International University Press, New York, 1960, p. 30.
- 28** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 8.
- 29** Rogers, L., 'Consumer adultery: The new British vice', *New Statesman*, 5 February 2007, p. 46.
- 30** Gray, J., *Men Are from Mars, Women Are from Venus*, Element – HarperCollins Publishers Inc, London, 2002, p. 293.
- 31** Ibid., p. 294.
- 32** Brook, T., 'Tony Brook, Spin, on the G5', Peer Poll 2004, *Creative Review*, 24 (10), October 2004, p. 45.
- 33** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 8.
- 34** Hummels, C., 'Engaging contexts to evoke experiences', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 39–45; p. 39.
- 35** Ibid., p. 39.
- 36** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 45.

## NOTES

- 37** Ibid., p. 8.
- 38** Djajadiningrat, T., Overbeeke, K. and Wensveen, S., 'But how, Donald, tell us how? On the creation of meaning in interaction design through feedforward and inherent feedback', in *Proceedings of the 4th Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques*, ACM Press, New York, 2001, pp. 285–91; p. 287.
- 39** Norman, D., *The Design of Everyday Things*, Basic Books, New York, 2002, p. 27.
- 40** Van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 126.
- 41** Ibid., p. 189.
- 42** Manzini, E., 'Sustainability and scenario building: Scenarios of sustainable wellbeing and sustainable solutions development', *Second International Symposium on Environmentally Conscious Design and Inverse Manufacturing, EcoDesign '01*, Tokyo, Japan, 11–15 December 2001.
- 43** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 188.
- 44** Seymourpowell, 'Seymourpowell hires Chris Sherwin as Head of Sustainability', *Seymourpowell Blog*, 11 January 2012: <http://blog.seymourpowell.com/2012/01/seymourpowell-hires-chris-sherwin-as-head-of-sustainability/#.VBqrWS5dWy8> (accessed November 17, 2010).
- 45** Ramakers, R., 'Contemporary engagement', in Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, 010 Publishers, Rotterdam, 1999, p. 7.

## Chapter Four Authors of experience

- 1** Shedroff, N., *Experience Design 1*, New Riders Publishing, Thousand Oaks, California, 2001, p. 2.
- 2** Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 75–82; p. 79.
- 3** Design and Emotion Society, 'Conference themes', *Design and Emotion 2004*: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php) (accessed 11 August 2004).
- 4** Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 75–82; p. 77.
- 5** Shedroff, N., *Experience Design*: [www.nathan.com/ed/index.html](http://www.nathan.com/ed/index.html) (accessed March 2004).
- 6** Jacobsen, B., 'Experience design', *A List Apart Magazine*, 18 August 2000: [www.alistapart.com/stories/experience](http://www.alistapart.com/stories/experience) (accessed July 2002).
- 7** Ibid.
- 8** Shedroff, N., *Experience Design*: [www.nathan.com/ed/index.html](http://www.nathan.com/ed/index.html) (accessed March 2004).
- 9** American Institute of Graphic Arts: [www.aiga.org/content.cfm](http://www.aiga.org/content.cfm) (accessed August 2004).
- 10** Ibid.
- 11** Jacobsen, B., 'Experience Design', *A List Apart Magazine*, 18 August 2000: [www.alistapart.com/stories/experience](http://www.alistapart.com/stories/experience) (accessed July 2002).

- 12** Movius One, *Experience Design*: [www.moviusone.com/philosophy\\_exp\\_design.html](http://www.moviusone.com/philosophy_exp_design.html) (accessed May 2004).
- 13** Dunne, A., *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*, MIT Press, Cambridge, Massachusetts, 2008, p. 10.
- 14** Ibid.
- 15** Ibid.
- 16** Virilio, P., *The Art of the Motor*, trans. Julie Rose, University of Minnesota Press, Minneapolis, Minnesota, 2005, p. 135.
- 17** Dunne, A., *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*, MIT Press, Cambridge, Massachusetts, 2008, pp. 21–2.
- 18** DiSalvo, C., Hanington, B. and Forlizzi, J., 'An accessible framework of emotional experiences for new product conception', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 251–5; p. 254.
- 19** Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 75–82; p. 75.
- 20** Ibid., p. 77.
- 21** Norman, D., *Emotional Design: Why We Love (or Hate) Everyday Things*, Basic Books, New York, 2004, p. 7.
- 22** Ibid., p. 5.
- 23** Ortony, A., Clore, G. L. and Collins, A., *The Cognitive Structure of Emotions*, Cambridge University Press, Cambridge, 1988, p.27.
- 24** Design and Emotion Society, 'Conference themes', *Design and Emotion 2004*: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php) (accessed 11 August 2004).
- 25** Ibid.
- 26** Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Heckert, P. (eds), *Proceeding of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, p. 79.
- 27** Ibid., p. 76 (italics in original).
- 28** Ibid., p. 79 (italics in original).
- 29** Design and Emotion Society, 'Conference themes', *Design and Emotion 2004*: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php), (accessed 11 August 2004).
- 30** Cupchik, G. C., 'Emotion in aesthetics: Reactive and reflective models', *Poetics*, 23 (1–2), 1995, pp. 177–88.
- 31** Cupchik, G. C., 'Suspense and disorientation: Two poles of emotionally charged literary uncertainty', in Vorderer, P., Wulff, H. J. and Friedrichsen, M. (eds), *Suspense: Conceptualizations, Theoretical Analyses and Empirical Explorations*, Lawrence Erlbaum, Mahwah, New Jersey, 1996, pp. 189–97.
- 32** Microsoft Corporation, *Encarta World English Dictionary*, Bloomsbury Publishing Plc, London, 1999.
- 33** Richmond, W., *Design Technology*: [www.fredraab.com/careprint2.htm](http://www.fredraab.com/careprint2.htm) (accessed August 2004).

## NOTES

- 34** Verbeek, P. and Kockelkoren, P., 'The things that matter', in Buchanan, R., Doordan, D. and Margolin, V. (eds), *The Designed World*, Berg, London, 2010, pp. 83–94.
- 35** Philips Research, *What Is Ambient Intelligence?*, Royal Philips Electronics, 2002: [www.research.philips.com/InformationCenter/Global/FArticleSummary.asp](http://www.research.philips.com/InformationCenter/Global/FArticleSummary.asp) (accessed September 2003).
- 36** Edgar Web Design Guide, *Emotional Design*: [www.eserver.org/courses/w01/tc510/edgar/Darryl](http://www.eserver.org/courses/w01/tc510/edgar/Darryl) (accessed August 2004).
- 37** Philips Research, *What Is Ambient Intelligence?*, Royal Philips Electronics, 2002: [www.research.philips.com/InformationCenter/Global/FArticleSummary.asp](http://www.research.philips.com/InformationCenter/Global/FArticleSummary.asp) (accessed September 2003).
- 38** Philips Research, *Projects Aiming for the 'Immersive Experience'*, Royal Philips Electronics, 2002: [www.research.philips.com/InformationCenter/Global/FArticleDetail.asp](http://www.research.philips.com/InformationCenter/Global/FArticleDetail.asp) (accessed August 2003).
- 39** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 122.
- 40** De Groot, C. H., *The Consciousness of Objects – Or the Darker Side of Design*, Birmingham Institute of Art and Design, University of Central England, Birmingham, 2002, p. 3.

## Chapter Five Sustaining narrative

- 1** Schultz, S. E., Kleine, R. E. and Kerman, 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 (1), 1989, pp. 359–66; p. 359.
- 2** Design Council, *Eleven Lessons: Managing Design in Eleven Global Companies* Desk Research Report, Design Council, London, 2007.
- 3** Walker, S., 'After taste: The power and prejudice of product appearance', *The Design Journal*, 12 (1), 2009, pp. 25–40.
- 4** Szalay, L. and Deese, J., *Subjective Meaning and Culture: An Assessment Through Word Associations*, Erlbaum, Hillsdale, New Jersey, 1978.
- 5** Shklovsky, V., 'Art as technique', translated/reprinted in Lee T., Lemon, J. and Marion, J. (eds), *Russian Formalist Criticism: Four Essays*, University of Nebraska Press, Lincoln, Nebraska, 1965.
- 6** Hybs, I., 'Beyond interface: A phenomenological view of computer systems design', *Leonardo*, 23 (3), 1996, pp. 215–23.
- 7** Norman, D. A., *Living with Complexity*, MIT Press, Cambridge, Massachusetts, 2011.
- 8** Gordon, A. and Suzuki, D., *It's a Matter of Survival*, Allen & Unwin, Sydney, Australia, 1990, p. 39.
- 9** Ibid., p. 40.
- 10** Ibid.
- 11** St Lukes Advertising Agency, 'Sensorama', St Luke's: [www.stlukes.co.uk/standard/senses/index.htm](http://www.stlukes.co.uk/standard/senses/index.htm) (accessed September 2001).
- 12** Levi Strauss & Co, 'A history of denim', Levi Strauss website: [www.levistrauss.com/about/history/denim.htm](http://www.levistrauss.com/about/history/denim.htm) (accessed September 2004).
- 13** Weston Thomas, P., 'Denim jeans', *Fashion Era* website: [www.fashion-era.com/denim\\_jeans\\_and\\_casual\\_wear.htm](http://www.fashion-era.com/denim_jeans_and_casual_wear.htm) (accessed September 2004).

- 14** Levi Strauss & Co, 'A history of denim': Levi Strauss website: [www.levistrauss.com/about/history/denim.htm](http://www.levistrauss.com/about/history/denim.htm) (accessed September 2004).
- 15** Ibid.
- 16** Bedbury, S., *A New Brand World*, Viking Press, New York, 2002, p. 106.
- 17** Grinyer, C., *Smart Design: Products that Change Our Lives*, RotoVision, Hove, UK, 2001.
- 18** Csikszentmihalyi, M. and Rochberg-Halton, E., *The Meaning of Things: Domestic Symbols and the Self*, Cambridge University Press, Cambridge, 1981.
- 19** Schultz, S. E., Kleine, R. E. and Kerman, 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 (1), 1989, pp. 359–66.
- 20** Gates, J., *The Ownership Solution*, Penguin, London, 1998, p. 163.
- 21** Williams, G., *21 | Twenty One: 21 Designers for Twenty-First Century Britain*, V&A Publishing, London, 2012, p. 12.
- 22** Botting, F. and Wilson, S., *The Bataille Reader*, Blackwell, Oxford, 1997, p. 185.
- 23** De Groot, C. H., *The Consciousness of Objects – Or the Darker Side of Design*, Birmingham Institute of Art and Design, University of Central England, Birmingham, 2002, p. 4.
- 24** Shelley, M., *Frankenstein: The Modern Prometheus*, Oxford Paperbacks, Oxford, 1998.
- 25** Aldiss, B. W., *Billion Year Spree: The True History of Science Fiction*, Schocken Books, New York, 1974.
- 26** Woodbridge, K. A., *The 'Birth' of a Monster*: [www.kimwoodbridge.com/maryshel/birth.shtml](http://www.kimwoodbridge.com/maryshel/birth.shtml) (accessed September 2004).
- 27** Asimov, I., *I, Robot*, Voyager Classics, New York, 2001.
- 28** Seiler, E., 'I, Robot, starring Will Smith', Asimov Online: [www.asimovonline.com](http://www.asimovonline.com) (September 2004).
- 29** Mander, J., *Four Arguments for the Elimination of Television*, Harvester Press, Brighton, 1980, p. 54.
- 30** Ibid.
- 31** Lasn, K., *Culture Jam: The Uncooling of America*, Eagle Brook, New York, 1999, p. 15.
- 32** Ibid.
- 33** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 46.
- 34** Ibid.
- 35** Botting, F. and Wilson, S., *The Bataille Reader*, Blackwell, Oxford, 1997, p. 185.
- 36** Benyus, J. M., *Biomimicry: Innovation Inspired by Nature*, William Morrow, New York, 1997, p. 95.
- 37** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 131.
- 38** De Groot, C. H., 'Experiencing the phenomenological object', Design Transformation Group (ed.), *Closing the Gap Between Subject and Object*, Design Transformation Group, London, 1997, p. 102.

## Chapter Six De-fictioning utopia

- 1** Kleine, J. H., 'An island of socialism in sixteenth century Europe: Socialism in the Utopia of Sir Thomas More', *Introduction to English Literature 110-200*, AHM Publishing Corporation,

## NOTES

- Illinois, 20 November 1993: [www.d-holliday.com/tmore/socialism.htm](http://www.d-holliday.com/tmore/socialism.htm) (accessed July 2004).
- 2** Rifkin, J., *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era*, G. P. Putnam & Sons, New York, 1995, p. 42.
  - 3** Shostak, A. B., *Utopian Thinking in Sociology: Creating the Good Society*, American Sociological Association, Washington DC, 2001.
  - 4** Winer, D., 'Monoculture, an Artifact of the 20th Century?': [www.davenet.scripting.com/2002/05/13/monocultureAnArtifactOfThe20thCentury](http://www.davenet.scripting.com/2002/05/13/monocultureAnArtifactOfThe20thCentury) (accessed August 2004).
  - 5** Dunne, A. and Raby, F., *Design Noir: The Secret Life Of Electronic Objects*, Birkhäuser, London, 2001, p. 59.
  - 6** Mitchell, M., *Gone With the Wind*, Macmillan, New York, 1936.
  - 7** Dick, P. K., *Blade Runner: Do Androids Dream of Electric Sheep?* Del Rey Books, New York, 1990.
  - 8** Orwell, G., 1984 (re-issue), Signet Books, New York, 1990.
  - 9** Gibson, W., *Neuromancer*, Voyager, HarperCollins Publishers Ltd, London, 1995.
  - 10** Wood, J., *The Virtual Embodied: Presence/Practice/Technology*, Routledge, London and New York, 1998, p. 45.
  - 11** Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001, p. 6.
  - 12** Sartre, J. P., *Being and Nothingness: A Phenomenological Essay on Ontology*, Routledge, London, 1969.
  - 13** Pearsall, J., *The Oxford Concise English Dictionary*, Oxford University Press, Oxford, 1999.
  - 14** Sartre, J. P., *Being and Nothingness: A Phenomenology and Essay on Ontology*, Routledge, London, 1969.
  - 15** Hybs, I., 'Beyond interface: A phenomenological view of computer systems design', *Leonardo*, 23 (3), 1996, pp. 215–23.
  - 16** Lasn, K., *Culture Jam: How to Reverse America's Suicidal Consumer Binge – And Why We Must*, Perennial Currents, New York, 2000.
  - 17** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, O10 Publishers, Rotterdam, 1997, p. 234.
  - 18** Benedict, R., *Patterns of Culture*, Routledge & Kegan Paul Ltd, London, 1955, p. 2.
  - 19** Silverman, H. J., *Derrida and Deconstruction*, Routledge, London, 1989, p. 85.
  - 20** MacKay, D. J. C., *Information Theory, Inference and Learning Algorithms*, Cambridge University Press, Cambridge, 2003.
  - 21** Lynch, D., *Blue Velvet*, De Laurentis, New York, 1986.

## Chapter Seven Real-world feasibility

- 1** Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, O10 Publishers, Rotterdam, 1999, p. 16.
- 2** Ramakers, R., 'Contemporary engagement', in Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, O10 Publishers, Rotterdam, 1999, p. 7.
- 3** Hawken, P., Lovins, A. and Hunter Lovins, L., *Natural Capitalism: Creating the Next Industrial Revolution*, Little, Brown & Company, Snowmass, Colorado, 1999.

- 4** Benyus, J. M., *Biomimicry: Innovation Inspired by Nature*, William Morrow, New York, 1997, p. 238.
- 5** Ibid., p. 279.
- 6** ES Magazine, 'Put your money where your mouth is', *Evening Standard/ES Magazine*, Associated Newspapers Ltd, UK, September 2000.
- 7** Ibid.
- 8** Cooper, T., 'Consumers, costs and choice', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 59–69; p. 63.
- 9** Chapman, J., *Emotionally Durable Design: Sustaining Relationships Between Users and Domestic Electronic Products*, PhD thesis (unpublished), University of Brighton, 1 April 2008, p. 155.
- 10** A full transcript of this session, along with the supporting documentation can be found as: [www.publications.parliament.uk/pa/l200708/lselect/lscstech/999/8020511.htm](http://www.publications.parliament.uk/pa/l200708/lselect/lscstech/999/8020511.htm) and the House of Lords Science and Technology Committee's final report, *Waste Reduction*, Stationery Office, London, 2008, can be accessed at: [www.publications.parliament.uk/pa/l200708/lselect/lscstech/163/163.pdf](http://www.publications.parliament.uk/pa/l200708/lselect/lscstech/163/163.pdf) (accessed July 2, 2013).
- 11** Hawken, P., Lovins, A. and Hunter Lovins, L., *Natural Capitalism: Creating the Next Industrial Revolution*, Little, Brown & Company, Snowmass, Colorado, 1999, p. 10.
- 12** van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 222.
- 13** Design and Emotion Society, 'Conference themes', *Design and Emotion* 2004, p. 10: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php) (accessed 11 August 2004).
- 14** Verbeek, P. P. and Kockelkoren, P., 'Matter matters', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 106.
- 15** Hafkamp, W., 'Immaterialization', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 43.
- 16** van Hinte, E., 'Careers', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 27.

*This page intentionally left blank*

# references

- Achterhuis, H., 'Equality's safety belt', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, O10 Publishers, Rotterdam, 1997.
- Alderfer, C. P., *Existence, Relatedness, and Growth*, The Free Press, New York, 1972.
- Aldiss, B. W., *Billion Year Spree: The True History of Science Fiction*, Schocken Books, New York, 1974.
- American Institute of Graphic Arts: [www.aiga.org/content.cfm](http://www.aiga.org/content.cfm) (accessed August 2004).
- Anderson, L., 'So here are the questions: Is time long or is it wide?', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, O10 Publishers, Rotterdam, 1997, p. 19.
- Asimov, I., *I, Robot*, Voyager Classics, New York, 2001.
- Association of Science – Technology Centers and the Smithsonian Institution Traveling Exhibition Service, *Rotten Tomatoes* website: [www.astc.org/exhibitions/rotten/fkl.htm](http://www.astc.org/exhibitions/rotten/fkl.htm) (accessed June 2002).
- AtKisson, A., *Believing Cassandra: An Optimist Looks at a Pessimist's World*, Chelsea Green, White River Junction, Vermont, 1999.
- Bateson, G., *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution and Epistemology* (new edition), University of Chicago Press, Chicago, Illinois, 2000.
- Batterbee, K. and Mattelmäki, T., 'Meaningful product relationships', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 339–41.
- Bedbury, S., *A New Brand World*, Viking Press, New York, 2002.
- Benedict, R., *Patterns of Culture*, Routledge & Kegan Paul Ltd, London, 1955.
- Benyus, J. M., *Biomimicry: Innovation Inspired by Nature*, William Morrow, New York, 1997.
- Bocock, R., *Consumption*, Routledge, London, 1993.
- Botting, F. and Wilson, S., *The Bataille Reader*, Blackwell, Oxford, 1997.
- Brook, T., 'Tony Brook, Spin, on the G5', Peer Poll 2004, *Creative Review*, 24 (10), October 2004, p. 45.
- Brown, R., *Social Psychology* (second edition), The Free Press, New York, 1986.
- Brunner, F. M., *Consumerism and Relationships: The Psychology of Extrapersonal Relationships*: [www.hooked.net/~brunner](http://www.hooked.net/~brunner) (accessed November 1996).
- Brunner, F. M., *On Consumerism*: [www.geocities.com/meifania/consumerism.html](http://www.geocities.com/meifania/consumerism.html) (accessed October 2003).
- Burnie, D., *Get a Grip on Ecology*, The Ivy Press, Lewes, 1999.
- Buy Nothing Day Organization: [www.buynothingday.co.uk](http://www.buynothingday.co.uk) (accessed November 1999).

## REFERENCES

- Carlson, R., *Experienced Cognition*, Lawrence Erlbaum, Mahwah, New Jersey, 1997.
- Carson, R., *Silent Spring*, Houghton Mifflin, Boston, Massachusetts, 2002[1962].
- Chapman, J., *Emotionally Durable Design: Sustaining Relationships Between Users and Domestic Electronic Products*, PhD thesis (unpublished), University of Brighton, 1 April 2008.
- Christer, K. and Cooper, T., 'Marketing durability: A preliminary review of the market potential for lifespan labels', *Academy of Marketing Conference*, Cheltenham, July 2004, pp. 51–67.
- Cohen, M., 'Property and sovereignty', in Macpherson, C. B. (ed.), *Property: Mainstream and Critical Positions*, University of Toronto Press, Toronto, 1999[1978].
- Cooper, T., 'Consumers, costs and choice', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 59–69.
- 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, pp. 15–27.
- Cooper, T., 'The value of longevity: Product quality and sustainable consumption', *Global Research Forum on Sustainable Production and Consumption*, Rio de Janeiro, 13–15 June 2012.
- Costanza, R. 'Natural capital', *The Encyclopedia of Earth*, 31 July 2008: [www.eoearth.org/view/article/154791](http://www.eoearth.org/view/article/154791) (accessed September 2014).
- Crampton-Smith, G., 'The art of interaction', *Doors3: Info-Eco, Doors of Perception*, The Netherlands Design Institute, Amsterdam, 1993: [http://museum.doorsofperception.com/doorsI/transcripts/cra\\_smi/cra\\_smi.html](http://museum.doorsofperception.com/doorsI/transcripts/cra_smi/cra_smi.html) (accessed February 2, 2009).
- Csikszentmihalyi, M., 'Why we need things', in Lubar, S. and Kingery, W. D. (eds), *History from Things: Essays on Material Culture*, Smithsonian Institute Press, Washington DC, 1993, pp. 20–9.
- Csikszentmihalyi, M. and Rochberg-Halton, E., *The Meaning of Things: Domestic Symbols and the Self*, Cambridge University Press, Cambridge, 1981.
- Cupchik, G. C., 'Emotion in aesthetics: Reactive and reflective models', *Poetics*, 23 (1–2), 1995, pp. 177–88.
- Cupchik, G. C., 'Suspense and disorientation: Two poles of emotionally charged literary uncertainty', in Vorderer, P., Wulff, H. J. and Friedrichsen, M. (eds), *Suspense: Conceptualizations, Theoretical Analyses and Empirical Explorations*, Lawrence Erlbaum, Mahwah, New Jersey, 1996, pp. 189–97.
- Cupchik, G. C., 'Emotion and industrial design: Reconciling meanings and feelings', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 75–82.
- Cushman, P., *Constructing the Self, Constructing America: A Cultural History of Psychotherapy*, Perseus Publishing, Reading, Massachusetts, 1997.
- D'Andrade, R. G. and Strauss, C., *Human Motives and Cultural Models*, Cambridge University Press, Cambridge, 1992.
- De Groot, C. H., 'Experiencing the phenomenological object', in Desig and Transformation Group (ed.), *Closing the Gap Between Subject and Object*, Design Transformation Group, London, 1997, pp. 20–1.
- De Groot, C. H., *The Consciousness of Objects – Or the Darker Side of Design*, Birmingham Institute of Art and Design, University of Central England, Birmingham, 2002.

- Department for Environment, Food and Rural Affairs, *Government Review of Waste Policy in England 2011*, DEFRA, London, 2011.
- Design Council, *Eleven Lessons: Managing Design in Eleven Global Companies Desk Research Report*, Design Council, London, 2007.
- Design and Emotion Society, 'Conference themes', *Design and Emotion 2004*: [www.designandemotion.org/de61.php](http://www.designandemotion.org/de61.php) (accessed 11 August 2004).
- Design Transformation Group, *Closing the Gap Between Subject and Object*, Design Transformation Group, London, 1997.
- Desmet, P., *Designing Emotions* (PhD thesis), Delft University of Technology, Delft, The Netherlands, 2002.
- Devall, B., 'The unsustainability of sustainability', *Culture Change: A Project of the Sustainable Energy Institute*: [www.culturechange.org/issue19/unsustainability.htm](http://www.culturechange.org/issue19/unsustainability.htm) (accessed September 2004).
- Dewey, J., *Art as Experience*, Penguin Putnam Inc., New York, 1934.
- Dick, P. K., *Blade Runner: Do Androids Dream of Electric Sheep?* Del Rey Books, New York, 1990.
- DiSalvo, C., Hanington, B. and Forlizzi, J., 'An accessible framework of emotional experiences for new product conception', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 251–5.
- Djajadiningrat, T., Overbeeke, K. and Wensveen, S., 'But how, Donald, tell us how? On the creation of meaning in interaction design through feedforward and inherent feedback', in *Proceedings of the 4th Conference on Designing Interactive Systems: Processes, Practices, Methods, and Techniques*, ACM Press, New York, 2001, pp. 285–91.
- Dow Jones Sustainability Indexes: [www.sustainability-index.com](http://www.sustainability-index.com) (accessed May 2002).
- Dubos, R., *The Wooring of Earth*, The Athlone Press, London, 1980.
- Dunne, A., *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design*, MIT Press, Cambridge, Massachusetts, 2008.
- Dunne, A. and Raby, F., *Design Noir: The Secret Life of Electronic Objects*, Birkhäuser, London, 2001.
- Edgar Web Design Guide, *Emotional Design*: [www.eserver.org/courses/w01/tc510/edgar/Darryl](http://www.eserver.org/courses/w01/tc510/edgar/Darryl) (accessed August 2004).
- Environmental Defence Fund Advertisement, *The Christian Science Monitor*, US, 1990.
- ES Magazine, 'Put your money where your mouth is', *Evening Standard/ES Magazine*, UK, Associated Newspapers Ltd, September 2000, p. 40.
- Eternally Yours, *About Eternally Yours*: [www.eternally-yours.nl/abouteternally.html](http://www.eternally-yours.nl/abouteternally.html) (accessed September 2001).
- Euro RSCG Worldwide, *Millennials: The Challenger Generation*, Prosumer Report, Vol. 11, Euro RSCG Worldwide, 2011.
- Feyerabend, P., *Against Method*, Verso, London, 1993.
- Fletcher, K., 'Clothes that connect', in Chapman, J. and Gant, N. (eds), *Designers, Visionaries and Other Stories: A Collection of Sustainable Design Essays*, Earthscan, London, 2007, pp. 118–32.
- Freud, S., *Civilization and Its Discontents*, W. W. Norton and Co., New York, 1989[1930].
- Fromm, E., *To Have or To Be*, Abacus, London, 1979.
- Gates, J., *The Ownership Solution*, Penguin, London, 1998.

## REFERENCES

- Gerasimov, D. V., *Chronology of Vegetation and Paleoclimatic Stages of Northwestern Russia During the Late Glacial and Holocene*, Institute of History of Material Culture, Russian Academy of Sciences, St Petersburg, 2002.
- Gibson, W., *Neuromancer*, Voyager, HarperCollins Publishers Ltd., London, 1995.
- Gordon, A. and Suzuki, D., *It's a Matter of Survival*, Allen & Unwin, Sydney, Australia, 1990.
- Gould, S. J., 'Our allotted lifetimes', *Natural History*, 86 (7), 1977, pp. 34–41.
- Gray, J., *Men Are from Mars, Women Are from Venus*, Element – HarperCollins Publishers Inc, London, 2002.
- Gregory, P., 'A four-legged friend', *Digital Home Magazine*, UK, August 2003, p. 114.
- Grinyer, C., *Smart Design: Products that Change Our Lives*, RotoVision, Hove, UK, 2001.
- Hafkamp, W., 'Immaterialization', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, O10 Publishers, Rotterdam, 1997, p. 43.
- Hardin, G., 'The tragedy of the commons', *Science*, 162 (3859), 1968, pp. 1243–8.
- Hawken, P., Lovins, A. and Hunter Lovins, L., *Natural Capitalism: Creating the Next Industrial Revolution*, Little, Brown & Company, Snowmass, Colorado, 1999.
- Heskett, J., *Toothpicks and Logos*, Oxford University Press, Oxford, 2002.
- Hood, B., *Super Sense: From Superstition to Religion – The Brain Science of Belief*, Constable, London, 2009.
- House of Lords Science and Technology Committee, *Waste Reduction*, Stationery Office, London, 2008: [www.publications.parliament.uk/pa/id200708/ldselect/ldsctech/163/163.pdf](http://www.publications.parliament.uk/pa/id200708/ldselect/ldsctech/163/163.pdf).
- Hummels, C., 'Engaging contexts to evoke experiences', in Overbeeke, C. J. and Hekkert, P. (eds), *Proceedings of the First International Conference on Design and Emotion*, Delft University of Technology, Delft, The Netherlands, 1999, pp. 39–45.
- Hybs, I., 'Beyond interface: A phenomenological view of computer systems design', *Leonardo*, 23 (3), 1996, pp. 215–23.
- Hyper Dictionary: [www.hyperdictionary.com/dictionary/animism](http://www.hyperdictionary.com/dictionary/animism) (accessed September 2003).
- Imberger, J., 'Are we moving towards sustainability?' *Kirby Lecture*, Moore River, Australia, 2003: [www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability\\_kirby.pdf](http://www.cwr.uwa.edu.au/presentations/KirbyLecture/Sustainability_kirby.pdf) (accessed September 2003).
- Jääskö, V. and Mattelmäki, T., 'Observing and probing', *DPPI '03*, Pittsburgh, 23–26 June 2003, pp. 126–31.
- Jääskö, V., Mattelmäki, T. and Ylirisku, S., 'The scene of experience', *The Good, the Bad and the Irrelevant* (Conference Proceedings), University of Art and Design Helsinki, 3–5 September 2003, pp. 341–5.
- Jacobsen, B., 'Experience design', *A List Apart Magazine*, 18 August 2000: [www.alistapart.com/stories/experience](http://www.alistapart.com/stories/experience) (accessed July 2002).
- Jones, R., *US Insurance Industry Perspectives on Global Climate Change*, Lawrence Berkeley National Laboratory, Berkeley, California, 2001.
- Jordan, P. W., *Designing Pleasurable Products*, Taylor & Francis, London, 2000.
- Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, O10 Publishers, Rotterdam, 1999.
- Kleine, J. H., 'An island of socialism in sixteenth century Europe: Socialism in the Utopia of Sir Thomas More', *Introduction to English Literature 110-200*, AHM Publishing Corporation, Illinois, 20 November 20 1993: [www.d-holliday.com/tmore/socialism.htm](http://www.d-holliday.com/tmore/socialism.htm) (accessed July 2004).

- Kleine, R. E. and Kerman, J. B., 'Measuring the meaning of consumption objects: An empirical investigation', *Advances in Consumer Research*, 15 (1), 1988, pp. 498–504.
- Koskijoki, M., 'My favourite things', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 134–5.
- Lacan, J., *Ecrits*, trans. Bruce Fink, W. W. Norton and Co., New York, 2006[!1966].
- Lasn, K., *Culture Jam: The Uncooling of America*, Eagle Brook, New York, 1999.
- Lasn, K., *Culture Jam: How to Reverse America's Suicidal Consumer Binge – And Why We Must*, Perennial Currents, New York, 2000.
- Leader, D. and Groves, J., *Introducing Lacan*, Icon Books, London, 1995.
- Leslie, M., 'Suddenly smarter', *Stanford Magazine*, Stanford, California, July/August 2002: [https://alumni.stanford.edu/get/page/magazine/article/?article\\_id=38306](https://alumni.stanford.edu/get/page/magazine/article/?article_id=38306).
- Levi Strauss & Co, 'A history of denim', Levi Strauss website: [www.levistrauss.com/about/history/denim.htm](http://www.levistrauss.com/about/history/denim.htm) (accessed September 2004).
- Lipps, T., *Academy Lecture*, 209/2, Germany, August 1912.
- London, B., *Ending the Depression Through Planned Obsolescence*, pamphlet, US, 1932.
- Lovelock, J., *Gaia: A New Way of Looking at Life on Earth*, Oxford University Press, Oxford, 1995.
- Lyman, F., *The Greenhouse Trap*, Beacon Press, Boston, Massachusetts, 1990.
- Lynch, D., *Blue Velvet*, De Laurentis, New York, 1986.
- MacKay, D. J. C., *Information Theory, Inference and Learning Algorithms*, Cambridge University Press, Cambridge, 2003.
- Mander, J., *Four Arguments for the Elimination of Television*, Harvester Press, Brighton, 1980.
- Manzini, E., *Eternally Yours* homepage: <http://home.wxs.nl/~muis/eternal.htm> (accessed April 1997).
- Manzini, E., 'Sustainability and scenario building: Scenarios of sustainable wellbeing and sustainable solutions development', Second International Symposium on Environmentally Conscious Design and Inverse Manufacturing, EcoDesign'01, Tokyo, Japan, 11–15 December 2001.
- Manzini, E., 'Ideas of wellbeing: Beyond the rebound effect', paper presented at Sustainable Services and Systems: Transitions towards Sustainability Conference, Amsterdam, 2002.
- Maslow, A. H., 'A theory of human motivation', *Psychological Review*, 50 (4), pp. 370–96.
- Max-Neef, M., 'Development and human needs', in Ekins, P. and Max-Neef, M. (eds), *Real-life Economics*, Routledge, London, 1992, pp. 197–214.
- Microsoft Corporation, *Encarta World English Dictionary*, Bloomsbury Publishing Plc, London, 1999.
- Miller, H., 'The social psychology of objects', *Understanding the Social World Conference*, University of Huddersfield, Huddersfield, 1995.
- Mitchell, M., *Gone With the Wind*, Macmillan, New York, 1936.
- Mont, O., *Functional Thinking: The Role of Functional Sales and Product Service Systems for a Function-Based Society*, International Institute for Industrial Environmental Economics (IIIEE), Lund University, Sweden, No. 5233, July 2002.
- Movius One, Experience Design: [www.moviusone.com/philosophy\\_exp\\_design.html](http://www.moviusone.com/philosophy_exp_design.html) (accessed May 2004).
- Nitto, N. and Shiozaki, J., 'Changing consumption patterns and new lifestyles in the 21st century', *NRI Papers*, Japan, No. 24, March 2001.

## REFERENCES

- Norman, D., *The Design of Everyday Things*, Basic Books, New York, 2002.
- Norman, D., *Emotional Design: Why We Love (or Hate) Everyday Things*, Basic Books, New York, 2004.
- Norman, D. A., *Living with Complexity*, MIT Press, Cambridge, Massachusetts, 2011.
- Online Etymology Dictionary: [www.etymonline.com/c8etym.htm](http://www.etymonline.com/c8etym.htm) (accessed August 2003).
- Ortony, A., Clore, G. L. and Collins, A., *The Cognitive Structure of Emotions*, Cambridge University Press, Cambridge, 1988.
- Orwell, G., 1984 (re-issue), Signet Books, New York, 1990.
- Pachauri, R. K. and Reisinger, A. (eds), *Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, IPCC, Geneva, 2007.
- Packard, V., *The Waste Makers*, Penguin, Middlesex, 1963.
- Palahniuk, C., *Fight Club*, Vintage, London, 2006[1996].
- Pearsall, J., *The Oxford Concise English Dictionary*, Oxford University Press, Oxford, 1999.
- Philips Design, *Visions of the Future*, Philips Design, Eindhoven, 1996.
- Philips Research, *Projects Aiming for the 'Immersive Experience'*, Royal Philips Electronics, 2002: [www.research.philips.com/InformationCenter/Global/FArticleDetail.asp](http://www.research.philips.com/InformationCenter/Global/FArticleDetail.asp) (accessed August 2003).
- Philips Research, *What Is Ambient Intelligence?*, Royal Philips Electronics, 2002: [www.research.philips.com/InformationCenter/Global/FArticleSummary.asp](http://www.research.philips.com/InformationCenter/Global/FArticleSummary.asp) (accessed September 2003).
- Pollan, M., *Second Nature*, Dell Publishing, New York, 1991.
- Postrel, V., 'The marginal appeal of aesthetics: Why buy what you don't need?', *Innovation (The Journal of the Industrial Designers Society of America)*, Spring 2004, pp. 31–6.
- Purbrick, L., *The Wedding Present: Domestic Life Beyond Consumption*, Ashgate, Aldershot, 2007.
- Ramakers, R., 'Contemporary engagement', in Joris, Y. (ed.), *Wanders Wonders: Design for a New Age*, 010 Publishers, Rotterdam, 1999.
- Richins, M. L., 'Valuing things: The public and private meanings of possessions', *Journal of Consumer Research*, 21 (3), 1994, pp. 504–21.
- Richmond, W., *Design Technology*: [www.fredraab.com/careprint2.htm](http://www.fredraab.com/careprint2.htm) (accessed August 2004).
- Rifkin, J., *The End of Work: The Decline of the Global Labor Force and the Dawn of the Post-Market Era*, G. P. Putnam & Sons, New York, 1995.
- Rogers, L., 'Consumer adultery: The new British vice', *New Statesman*, 5 February 2007, p. 46.
- Royal Society for the Encouragement of Arts (RSA): [www.weeeman.org/index.html](http://www.weeeman.org/index.html) (accessed 22 June 2006).
- Rutherford, F. J. and Ahlgren, A., *Science for all Americans* (online), Chapter 8: [www.project2061.org/publications/sfaa/online/chap8.htm](http://www.project2061.org/publications/sfaa/online/chap8.htm) (accessed August 12, 2004).
- Sartre, J. P., *Being and Nothingness: A Phenomenological Essay on Ontology*, Routledge, London, 1969.
- Schifferstein, H. N. J., Mugge, R. and Hekkert, P., 'Designing consumer–product attachment', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2004, pp. 378–83.
- Schopenhauer, A., *On the Variety of Existence*, Scholarly Press, Michigan, 1970.
- Schultz, S. E., Kleine, R. E. and Kerman, 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 (1), 1989, pp. 359–66.

- Schumacher, E. F., *Small Is Beautiful: Economics as if People Mattered*, Harper Perennial, New York, 2010[1973].
- Searles, H. F., *The Nonhuman Environment*, International University Press, New York, 1960.
- Seiler, E., 'I, Robot, starring Will Smith', Asimov Online: [www.asimovonline.com](http://www.asimovonline.com) (accessed September 2004).
- Sessions, G., *Deep Ecology for the 21st Century: Readings on the Philosophy and Practice of the New Environmentalism*, Shambhala, Boston, Massachusetts, 1995.
- Seymourpowell, 'Seymourpowell hires Chris Sherwin as Head of Sustainability', Seymourpowell Blog, 11 January 2012: <http://blog.seymourpowell.com/2012/01/seymourpowell-hires-chris-sherwin-as-head-of-sustainability/#.VBqrWS5dWy8> (accessed November 17, 2010).
- Shah, A., 'Behind consumption and consumerism', *Global Issues*: [www.globalissues.org/TradeRelated/Consumption.asp](http://www.globalissues.org/TradeRelated/Consumption.asp) (accessed May 2003).
- Shedroff, N., *Experience Design I*, New Riders Publishing, Thousand Oaks, California, 2001.
- Shedroff, N., *Experience Design*: [www.nathan.com/ed/index.html](http://www.nathan.com/ed/index.html) (accessed March 2004).
- Shelley, M., *Frankenstein: The Modern Prometheus*, Oxford Paperbacks, Oxford, 1998.
- Shklovsky, V., 'Art as technique', translated/reprinted in Lee T., Lemon, J. and Marion J. (eds), *Russian Formalist Criticism: Four Essays*, University of Nebraska Press, Lincoln, Nebraska, 1965.
- Shostak, A. B., *Utopian Thinking in Sociology: Creating the Good Society*, American Sociological Association, Washington DC, 2001.
- Silverman, H. J., *Derrida and Deconstruction*, Routledge, London, 1989.
- St Lukes Advertising Agency, 'Sensorama', St Luke's: [www.stlukes.co.uk/standard/senses/index.htm](http://www.stlukes.co.uk/standard/senses/index.htm) (accessed September 2001).
- Sudjic, D., *The Language of Things*, Allen Lane, London, 2008.
- Sweet, F., *Frog: Form Follows Emotion*, Thames & Hudson, London, 1999.
- Szalay, L. and Deese, J., *Subjective Meaning and Culture: An Assessment Through Word Associations*, Erlbaum, Hillsdale, New Jersey, 1978.
- Thackara, J., 'The design challenge of pervasive computing', *Interactions*, 8 (3), May/June 2001, pp. 46–52.
- Thompson, J., 'More than meets the eye: Exploring opportunities for new products, which may aid us emotionally as well as physically', in McDonagh, D., Hekkert, P., van Erp, J. and Gyi, D. (eds), *Design and Emotion*, Taylor & Francis, London, 2005, pp 332–6.
- Treanor, P., *Why Sustainability Is Wrong*: <http://web.inter.nl.net/users/Paul.Treanor/sustainability.html> (accessed September 2004).
- Tzu, L., *Tao Te Ching: The Book of the Way*, Kyle Kathie, London, 1988.
- UNDP (United Nations Development Programme), *Human Development Report 1998*, Oxford University Press, New York, 1998.
- UNEP (United Nations Environment Programme), *UNEP Annual Report*, UNEP, Paris, 2007.
- US Census Bureau, *Global Population at a Glance: 2002 and Beyond*, US Department of Commerce Economics and Statistics Administration, Washington DC, March 2004.
- van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997.
- van Hinte, E., 'Careers', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, p. 27.

## REFERENCES

- van Hinte, E. and Bakker, C., *Trespassers: Inspirations for Eco-Efficient Design*, The Netherlands Design Institute, Rotterdam, 1999.
- Van Nes, N. and Cramer, J., 'Influencing product lifetime through product design', *Business Strategy and the Environment*, 14 (5), 2005, pp. 286–99.
- Verbeek, P. P. and Kockelkoren, P., 'Matter matters', in van Hinte, E. (ed.), *Eternally Yours: Visions on Product Endurance*, 010 Publishers, Rotterdam, 1997, pp. 100–115.
- Verbeek, P. and Kockelkoren, P., 'The things that matter', in Buchanan, R., Doordan, D. and Margolyn, V. (eds), *The Designed World*, Berg, London, 2010, pp. 83–94.
- Virilio, P., *The Art of the Motor*, trans. Julie Rose, University of Minnesota Press, Minneapolis, Minnesota, 2005.
- Wahba, M. A. and Bridgewell, L. G., 'Maslow reconsidered: A review of research on the need hierarchy theory', *Organizational Behavior and Human Performance*, 15 (2), 1976, pp. 212–40.
- Walker, S., 'How the other half lives: Product design, sustainability and the human spirit', *IDATER 1999 Conference*, Loughborough University, 1999, pp. 237–42.
- Walker, S., *Sustainable By Design: Explorations in Theory and Practice*, Earthscan, London, 2006.
- Walker, S., 'After taste: The power and prejudice of product appearance', *The Design Journal*, 12 (1), 2008, pp. 25–40.
- Webb, F. 'Designing for a sustainable future', *Making It Magazine: Industry for Development* (published by United Nations Industrial Development Organisation) 30 August 2013: [www.makingitmagazine.net/?p=6906](http://www.makingitmagazine.net/?p=6906) (accessed June 11, 2002).
- Weston Thomas, P., 'Denim jeans', *Fashion Era* website: [www.fashion-era.com/denim\\_jeans\\_and\\_casual\\_wear.htm](http://www.fashion-era.com/denim_jeans_and_casual_wear.htm) (accessed September 2004).
- White, L., 'The historical roots of our ecological crisis', *Science*, 155 (3767), 1967, pp. 1203–7.
- Williams, G., *21 | Twenty One: 21 Designers for Twenty-First Century Britain*, V&A Publishing, London, 2012.
- Winer, D., 'Monoculture, an artifact of the 20th century?': [www.davenet.scripting.com/2002/05/13/monocultureAnArtifactOfThe20thCentury](http://www.davenet.scripting.com/2002/05/13/monocultureAnArtifactOfThe20thCentury) (accessed August 2004).
- Wood, J., *The Virtual Embodied: Presence/Practice/Technology*, Routledge, London and New York, 1998.
- Wood, J., 'The culture of academic rigour: Does design research really need it?', *Design Cultures Conference Proceedings*, Sheffield Hallam University, March–April 1999.
- Woodbridge, K. A., 'The 'Birth' of a Monster': [www.kimwoodbridge.com/maryshel/birth.shtml](http://www.kimwoodbridge.com/maryshel/birth.shtml) (accessed September 2004).
- Worldometers, 'Current world population': [www.worldometers.info/world-population/](http://www.worldometers.info/world-population/) (accessed December 2013).
- Wright, S. and McCrea, D., *The Handbook of Organic and Fair Trade Food Marketing*, Blackwell, Oxford, 2007.
- Yen Mah, A., *Watching the Tree*, HarperCollins, London, 2001.

# index

## A

absolute signification 148  
acquired needs 49–50 *see also need*  
acquired significance 119  
advertising 42, 138, 173, 190, 201  
ageing 55, 62, 109, 113, 120, 131–139, 175  
Agency of Design, The 14, 117  
agriculture 28  
air pollution 35–36  
alienation 60, 125–128, 151, 153  
alterity 115, 144–145 *see also autonomous*  
Anson, Pascal 154  
Ambient Intelligence 111  
ambiguity 120, 144  
American Institute of Graphic Arts 96  
animistic 16, 79  
anthropocentrism 7, 26–27, 55, 148, 167  
appropriation 44, 48  
artificial life 147  
Arts and Crafts 8  
Asimov, Isaac 126  
aspirations 39, 42, 59, 61, 70  
atmospheric pollution 179  
attention span 107–108  
autonomy 24, 92, 112, 115, 125–126, 131, 145, 165, 175  
avoidance 39, 107

## B

Bataille, Georges 5, 130  
Bateson, Gregory 27  
Baudrillard, Jean 48

behaviourism 103, 107  
biodiversity 7, 20, 34, 97, 167  
biohazard 12  
biosphere 5, 8, 20, 33, 35, 51, 57, 62, 160, 167  
Bjaadal, Kristine 90  
Blue Velvet 153  
Bocock, Robert 41  
boiled frog syndrome 116  
boredom 89, 107  
boycot 9, 171  
brain 32, 83, 122, 126  
brand loyalty 119, 150, 171, 173, 176  
Braungart, Michael 176  
Brecht, Bertolt 127  
Breuer, Marcel 8  
Buy Nothing Day Organization 42

## C

cadmium 20–21  
camera 25, 145–146, 171  
capitalism 13, 74, 113, 160, 162, 164  
Celtic 2  
character 57–58, 87, 117–118, 134–137, 143, 148, 175  
chunking 124  
climate change 27, 35, 120  
cognition 104, 152, 158  
composites 55  
conscience–time 37  
consciousness 2, 5, 24, 44, 55, 107, 115, 144, 146–147, 151, 170, 174–175  
conspicuous consumption 176

## INDEX

- consumerism 16, 36–37, 41–42, 58, 68–69, 74, 144  
contemporary style 67  
contextual sensitivity 43  
creative industry 10, 16, 19, 62, 97, 145, 170  
creativity 17–18, 66, 86, 138, 174  
Cushman, Philip 69  
Cupchik, Dr Gerald 103  
customization 46, 119, 135, 159  
cybernetic 5, 25, 53, 121, 148  
Csikszentmihalyi, Mihaly 46
- D**  
Darwin, Charles 2, 51, 53  
Dean, Tanya 123, 129  
de-fictioning 142–144  
deception 150–151, 155  
deflower 58, 124, 143, 150  
deforestation 35, 167  
demystify 58, 143  
Denim jeans 116, 117–118, 131, 135  
dependency 81  
Derrida, Jacques 17  
Design and Emotion Society 67  
design for disassembly 8, 10, 169, 173  
Desmet, Pieter 46  
design language 19, 122  
detachment 16, 48, 174–175  
disappointment 18–21, 29, 71–72, 75, 92, 109, 151 see also disillusionment  
disenchantment 137–138  
disillusionment 151 see also disappointment  
Dow Jones Sustainability Group 10  
dreams 1, 39, 59, 71, 124 see also aspirations  
Dubos, Rene 2  
duckweed 5  
Dunne, Anthony 100–101
- E**  
Eames, Charles 8  
Eckhart, Meister 7  
economy 4, 10, 160–161, 165, 172, 176  
ego 51, 59–60, 68  
*Einfühlung* 25
- Einstein, Albert 29, 50, 70  
electronics 8, 110–111, 139, 171  
emissions 8, 34  
emotional attachment 47, 63–65, 68, 70, 75–82, 158, 178, 180  
enchantment 124, 137, 144, 150, 152 see also magic  
energy efficiency 26, 169  
Engage by Design 139  
*Eternally Yours* 179  
existential 33, 39, 58, 67, 160  
expectation 43, 57–59, 72, 75, 92, 109, 138, 149, 175  
extinction 39  
extropersonal 68–69
- F**  
Falk, Pasi 48  
Falla, Dominique 3  
feed-forward 82  
feedback 82, 84, 115, 124, 145, 151 see also inherent feedback  
fiction 81, 126, 128, 137, 140–145, 148, 150–151, 174–175, 180 see also mystery  
foreignments 153  
fossil fuels 27, 34  
frame tale 127, 128 see also storytelling  
Frankenstein 125–126  
free will 115, 125, 145, 175  
Fresh Kills Landfill Site 12  
Freud, Sigmund 59–60, 68  
Friends of the Earth 2  
Frog Design 38, 110  
Fromm, Erich 47  
Fuller, Richard Buckminster 8  
futurologists 142, 180  
fuzzy interaction 83–84  
fuzzy interfaces 83
- G**  
Gaia 2, 5 see also Lovelock, James  
Gandhi 41  
Gant, Nick 123, 129  
Gerasimov, D.V. 66  
gimmicks 150

global warming 21, 27, 36, 161

Greenpeace 2

## H

Hardin, Garret 2, 4

Harvard University 6

Heskett, John 34

homogenized 31, 125, 139

honeymoon period 63, 72, 74–75, 79

Hood, Bruce 70

Houseplants 115–121

Human–computer interaction 95

Hummels, Caroline 80

## I

I, Robot 126

I-Ching 104

identity 17, 39, 50, 59–60, 100, 134, 140, 149,

156, 160, 178

idiosyncrasies 43–44, 88, 97, 106, 118,

148

immersive experience 95, 107–108, 110 see

also experience design

inclusive 2, 67, 101

individualism 23, 67–68

industrialization 141

industrial revolution 6, 8, 69, 125, 131, 160–161

Information Theory 152

inherent feedback 84 see also feedback

innate needs 49–50

interpersonal 23, 68

intimacy 44, 68, 97, 106, 119, 121

intuitive 100, 105, 108, 151

islands of slowness 16, 83 see also slowness

## J

jack in the box 151

jolts 127, 148, 150, 152–156

just noticeable difference 115, 153 see also

Norman, Donald

## K

Klein, Richard G. 43, 66

Koolhaas, Rem 6

## L

Lacan, Jacques 59

landfill 8, 11–13, 20, 24–25, 62, 122, 162, 173

landfill taxation 162, 173

layers of meaning 110 see also meaning

leasing 176–178

legislation 24, 114, 160, 162, 165, 170, 173–174 see also environmental law

linguistics 60

Lipps, Theodor 25

local 7–8, 20, 29, 66, 86, 100, 145

Lovelock, James 2 see also Gaia

low-impact materials 10

Lynch, David 153

## M

magic 47, 79, 120–121, 151 see also enchantment

maintenance 81, 135, 178, 179 see also repair

Manzini, Ezio 83

market share 18, 119, 173, 180

marriage guidance 76

Marx 67

Maslow's hierarchy of needs 50 see also need

materialism 8, 23, 67–69, 125

Max-Neef, Manfred 50

memory 43, 64–65, 124, 148, 159, 178

miniaturization 24, 101, 111–112

mirror stage 17, 39, 59 see also Lacan, Jacques

modernity 20, 134, 157

monoculture 139

monotony 57, 79, 107

Morris, William 8

motivation 26, 30, 32, 36, 39, 41, 47, 49, 60, 106, 162

MTV 127

Muto, Enkapune Ya 66

mystery 19–20, 58, 63, 84, 122, 142–144, 152 see also fiction

## INDEX

### N

NASA 1  
natural capital 4, 7  
natural resources 5, 10, 21–22, 33, 35–36, 84, 130, 161–162  
Neal, Gareth 40  
need 29, 33, 37, 41–42, 49–51, 59, 67, 70–74, 97, 111–112, 121, 178, 180 see also Maslow's heirarchy of needs  
newness 75, 78, 84, 107, 113–114, 133  
Nimes, serge de 117  
nomadic 23, 34, 37, 141  
Nomura Research Institute 53  
Norman, Donald 104, 153 see also just noticeable difference  
nothingness 58, 111, 153  
novelty 107, 143, 152

### O

obsolescence 12, 57–58, 61, 119, 121, 139  
see also planned obsolescence  
oil 4, 12, 25, 167  
omnipresence 151  
ontological 32  
organic 28–29, 59, 135  
Ornstein, Robert 116  
ownership 178–179

### P

Pace 8, 76, 83–84, 109–110, 127, 170  
Packard, Vance 12  
patina 119, 133, 134, 136  
pets 58, 125, 136  
phantile drive 149–152  
placebo 153  
planned obsolescence 12, 121 see also obsolescence  
Plato 17, 67, 124, 150  
pluralism 71, 97, 145–146, 160  
poetic 16, 29, 71, 94, 143  
polymers 13, 16, 55, 135  
polysemy 43  
population 4–7, 21, 34, 54, 66, 162, 175  
provocateur 146  
psychoanalysis 60

### R

real world 57  
rebirth 44, 144  
repair 10, 14, 21–22, 49, 62, 73, 109, 114, 157, 165, 177–179 see also maintenance  
repetition 107, 144  
Rifkin, Jeremy 137  
root causes 15, 164

### S

Sartre, Jean Paul 58, 143  
Saussure, Ferdinand de 17  
Schumacher, Fritz 6  
Schumacher Society 122  
semiotic 122, 149  
service economy 4, 10, 165, 176  
Shedroff, Nathan 89  
Shelley, Mary 125–126  
signification 148–149  
Silicon Valley Research Lab 58  
slowness 16, 83 see also islands of slowness  
social interaction 31, 46, 124  
spare time 32, 179  
spiritual 67, 69, 122, 153, 155  
spontaneity 121, 138, 149  
Stahel, Walter 121, 176  
Stanistreet, Stan 102  
stimulus 31, 39, 106, 107, 115  
storytelling 98, 122, 124 see also frame tale  
Strauss, Levi 117–118  
subjective 148  
Sudjic, Deyan 11  
Sugru 166  
sustainable communities 28  
sustainable development 28  
symptom-focused 13, 167, 169 see also Western medicine

### T

technophobia 112  
technocentrism 16, 18, 20–22, 29, 139

teddy bear factor 121  
 Three Laws of Robotics 126  
 totem 47, 65  
 toxic waste 20, 21, 120, 161  
 Tragedy of the commons 4  
 transience 27, 51, 55, 130  
 Tripp Trapp Chair 77  
 typologies 16–17, 19

**U**

uniqueness 54, 88, 106, 148 *see also individualism*  
 upgrade 10, 21–22, 73, 144, 157, 177–179  
 usability 67, 92, 95, 103, 110  
 use–career 21, 179  
 US Census Bureau 6  
 utilitarian 7, 13, 17, 37, 81  
 utopia 20, 32, 54, 72, 110, 134, 137–142

**V**

vampire 31  
 virtual reality 108  
 visceral 104, 119, 162, 176

**W**

Warren, William 93  
 WEEE Directive 176  
 Western medicine 13 *see also symptom-focused*

white goods 8, 33, 141  
 Whiting, Emma 163  
 Wilhelmsen, Siren Elise 85  
 Wood, Bethan Laura 132  
 Wood London 132  
 Wood, John 57  
 Wright, Frank Lloyd 8

**Y**

Yin and Yang 92