

# FUNOLOGY

# HUMAN-COMPUTER INTERACTION SERIES

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## VOLUME 3

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# Funology

From Usability to Enjoyment

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# Contents

<b>Authors and Affiliations.....</b>	<b>iii</b>
<b>Preface - How to Use this Book .....</b>	<b>vii</b>
<b>Foreword by Patrick W. Jordan .....</b>	<b>xi</b>
<b>Introduction - From Usability to Enjoyment .....</b>	<b>xiii</b>
<b><u>SECTION ONE: THEORIES AND CONCEPTS</u></b>	
<b>Introduction to Section 1.....</b>	<b>3</b>
<b>Chapter 1 - Let's Make Things Engaging .....</b>	<b>7</b>
<i>Kees Overbeeke, Tom Djajadiningrat, Caroline Hummels, Stephan Wensveen and Joep Frens</i>	
<b>Chapter 2 - The Engineering of Experience .....</b>	<b>19</b>
<i>Phoebe Sengers</i>	
<b>Chapter 3 – The Thing and I: Understanding the Relationship Between User and Product.....</b>	<b>31</b>
<i>Marc Hassenzahl</i>	
<b>Chapter 4 - Making Sense of Experience .....</b>	<b>43</b>
<i>Peter Wright, John Mccarthy and Lisa Meekison</i>	
<b>Chapter 5 - Enjoyment: Lessons from Karasek.....</b>	<b>55</b>
<i>Petter Bae Brandtzæg, Asbjørn Følstad and Jan Heim</i>	
<b>Chapter 6 - Fun on the Phone: The Situated Experience of Recreational Telephone Conferences .....</b>	<b>67</b>
<i>Darren Reed</i>	
<b>Chapter 7 - The Enchantments of Technology .....</b>	<b>81</b>
<i>John McCarthy and Peter Wright</i>	
<b>Chapter 8 - The Semantics of Fun: Differentiating Enjoyable Experiences</b>	<b>91</b>
<i>Mark Blythe and Marc Hassenzahl</i>	
<b><u>SECTION TWO: METHODS AND TECHNIQUES</u></b>	
<b>User Empowerment and the Fun Factor .....</b>	<b>103</b>
<i>An interview with Jakob Nielsen</i>	
<b>Introduction to Section 2.....</b>	<b>107</b>
<b>Chapter 9 - Measuring Emotion: Development and Application of an Instrument to Measure Emotional Responses to Products .....</b>	<b>111</b>
<i>Pieter Desmet</i>	
<b>Chapter 10 - That's Entertainment! .....</b>	<b>125</b>
<i>John Karat and Clare-Marie Karat</i>	
<b>Chapter 11 – Designing for Fun: User-Testing Case Studies.....</b>	<b>137</b>
<i>Randy Pagulayan, Keith Steury, Bill Fulton and Ramon Romero</i>	
<b>Chapter 12- Playing Games in the Emotional Space.....</b>	<b>151</b>

*Kristina Andersen, Margot Jacobs and Laura Polazzi*

**Chapter 13- Deconstructing Experience: Pulling Crackers Apart.....165**

*Alan Dix*

**Chapter 14 - Designing Engaging Experiences with Children and Artists 179**

*Richard Hull and Jo Reid*

**Chapter 15 – Building Narrative Experiences for Children Through Real Time Media Manipulation: POGO World .....189**

*Antonio Rizzo, Patrizia Marti, Francoise Decortis, Job Rutgers and Paul Thursfield*

**SECTION THREE: CASE STUDIES IN DESIGN**

**Introduction to Section 3.....203**

**Chapter 16 - The Joy of Telephony: Designing Appealing Interactions....205**

*Hubertus Hohl, Klaus Wissmann and Manfred Burger*

**Chapter 17 - From Usable to Enjoyable Information Displays .....213**

*Sara Ljungblad, Tobias Skog and Lars Erik Holmquist*

**Chapter 18 - Fun for All: Promoting Engagement and Participation in Community Programming Projects .....223**

*Mary Beth Rosson and John Carroll*

**Chapter 19 - Storytelling & Conversation to Improve the Fun Factor in Software Applications .....233**

*Norbert Braun*

**Chapter 20 - Deconstructing Ghosts .....243**

*Jonathan Sykes and Richard Wiseman*

**Chapter 21 – Interfacing the Narrative Experience .....249**

*Jennica Falk*

**Chapter 22 - Whose Line is it Anyway? Enabling Creative Appropriation of Television .....257**

*Erik Blankinship and Pilapa Esara*

**Chapter 23- The Interactive Installation ISH: in Search of Resonant Human Product Interaction .....265**

*Caroline Hummels, Kees Overbeeke and Aadjan Van Der Helm*

**Chapter 24 - Fun with Your Alarm Clock: Designing for Engaging Experiences through Emotionally Rich Interaction .....275**

*Stephan Wensveen and Kees Overbeeke*

**INTEGRATED BIBLIOGRAPHY .....283**

## PREFACE - HOW TO USE THIS BOOK

- Mark: Ah, someone is reading our book.
- Andrew: So they are, quick, say something interesting!
- Mark: What?
- Andrew: Tell them what a great book this is! We need to get their attention and keep them reading! Quick!
- Mark: Oh ... uhm, I can't think of anything to say now. Can't Pete do it; he'd put it much better than I could.
- Peter: What's going on?
- Andrew: We've got a reader and we're introducing the Funology book.
- Mark: Snappy title! I thought of that.
- Andrew: That's as may be, but it doesn't really say what it's about does it?
- Peter: Well, the book is about the move in Human Computer Interaction studies from standard usability concerns towards a wider set of problems to do with fun, enjoyment, aesthetics and the experience of use. Traditionally HCI has been concerned with work and task based applications but as digital technologies proliferate in the home -
- Andrew: Gah! Shut up! That sounds really dull! This book is supposed to be about enjoyment! Can't you say something that makes it sound like fun? Where's Kees?
- Kees: I'm just relaxing over here. It's very hard work editing a book you know. Andrew, you need to take things easier.
- Andrew: But the reader -
- Kees: Yes, yes, but the reader can see from the contents page that we have an interesting collection here. For a long time now people in the field have been talking about expanding the concept of usability, even people like Jakob Nielsen -
- Andrew: He's in the book!
- Kees: Yeah, sure the web guru is here, and even Nielsen, who has been associated with a "no frills" straight usability approach, has been thinking about *engaging* the user.
- Peter: The community has been asking questions about enjoyment for some time and we're now at the stage where we have a critical mass of work providing answers. We've seen quite a lot of ideas in this area coming through at the Computers and Fun workshops at York over the last four years -
- Andrew: My idea, those, you know.
- Peter: And then the Funology workshop at CHI last year which this collection is based on.
- Kees: Yeah, I think the collection maps the field pretty well... but it isn't fun.
- Andrew: Gah!

- Mark: Well no-one expects an analysis of humour to make them laugh do they? We should be telling them “how to use the book” and skip the boring bits.
- Andrew: There aren’t any boring bits! Each sentence is a glittering jewel!
- Mark: Well that’s as may be, but nobody has to read all of it, that’s why it’s in sections.
- Andrew: Three very *exciting* sections! The first is *theories and concepts*. HCI has always been a magpie discipline and here we have a range of positions borrowed from a number of fields: anthropology, sociology, psychology, literary and cultural studies.
- Peter: This section will be of most interest to people who want answers to questions like, what’s wrong with standard usability approaches, what is “user experience”, what do we mean by enjoyment, play, fun and is it possible to design user experience at all? This kind of theoretical -
- Kees: Bullsh-
- Andrew: Challenging and stimulating discussion! With each chapter more interesting than the last will appeal to -
- Kees: People with too much time on their hands? No, I’m kidding. It will appeal to ... uhm ...
- Mark: People with an interest in understanding the psychological, social and philosophical problems inherent in the study of enjoyment and the design of enjoyable experiences.... Did that sound alright? I think I might go and lie down now.
- Peter: And then more practically we have the *methods and techniques* section.
- Kees: Yeah, not so many of those though.
- Peter: No there aren’t and I think this might reflect the field. As a relatively new area of interest there aren’t that many HCI techniques for looking at enjoyment that have proven to be useful. So this section begins with adaptations of fairly standard usability approaches and moves towards more innovative methods.
- Andrew: And then in the final section we have a series of case studies -
- Kees: A collection of neat ideas.
- Andrew: Oh, it’s much more than that! Each of the *case studies* reflects on the problems raised in the previous two sections and tells the story of how the theoretical problems were addressed in practice, what methods were used, what they produc-
- Kees: Yeah, it’s a collection of neat ideas. If you are a designer and you want to be inspired – go there straight away.
- Mark: Well I think that’s the preface taken care of don’t you?
- Peter: Yeah, what’s next?
- Kees: Lunch?
- Mark: No it’s the foreword isn’t it?
- Andrew: Yes! The famous Patrick Jordan is up next. That should be *very* interesting indeed!
- Mark: And then it’s the introduction.
- Kees: What’s the difference between a foreword, a preface and an introduction?

- Peter        The introduction is longer. It talks to the ontological problems that the publisher wanted us to address doesn't it?
- Andrew      Bastards.
- Mark:        What?
- Andrew      Publishers. Bastards. "You do all the copy editing, proof reading and work, and we'll take any and all of the money made. Oh and by the way can you address the "ontological" problems too". Bastards.
- Kees:        Well this was fun, let's do it again some time.
- Andrew:     Are you taking the piss?
- Peter:       How's that reader doing? Are they looking engaged?
- Mark:        I'm not sure, it's difficult to see from here.

# DESIGNING GREAT STUFF THAT PEOPLE LOVE

## FOREWORD BY PATRICK W. JORDAN

For a product or service offer to be really compelling it has to engage with the people for whom it is designed at three different levels. In the first instance it has to be able to perform the task for which it was designed. A car has to be able to get you from A to B, a TV has to show TV shows, you have to be able to make a call using a telephone. The product's functionality should work well and it should be easy to use. The second level is to do with the emotions associated with the product or service. These should be appropriate in the context of the associated tasks. For example, if you are using an electronic banking system, then feelings of trust and security might be appropriate, whereas using a stereo should be fun and exciting, driving a sports car should be exciting too, but there should also be a feeling of safety and security.

The third level reflects the aspirational qualities associated with the product or service. What does owning the product or using the service say about you? If you own the latest, smallest mobile phone, then you must be a pretty cool person. If you own a Bang and Olufsen stereo, then you've got really refined taste. If you buy your groceries over the internet, then you're up to date, with it, and an all round smart person. Well, at least these are some of the stereotypes! The point is that our consumer choices say something about us to others and to ourselves. It is important that the customer feels his or her choices are 'lifestyle affirming'. In other words owning the product or using the service should make people feel the way they want to feel about themselves, not embarrass them or make them feel lousy in some other way.

Traditionally, when human-factors and human-computer interaction (HF/HCI) approaches have been used to evaluate the fit between people and products or services, it is the first of these levels that is emphasized. The suggestion is that provided the product or service helps a person to achieve what they want to do and that this can be done comfortably within their physical and cognitive capabilities then the product or service can be said to 'fit' the person.

These kinds of approaches tend to see the person as a 'user' and the product or service as a 'tool' - the idea being that the user uses the tool to complete a task. Another metaphor that is often used is that of a system comprising user, tool and task. Here the user tends to be characterized as a physical and cognitive component of a system. If the 'tool' facilitates the 'task' without exceeding the capabilities of the 'component' then, again, the product or service is declared to be 'usable' and to be a good fit to the user.

While these usability-based approaches certainly tackle some very important issues, they tend to take a view of people that is somewhat limited - perhaps even dehumanising. The problem is that they tend to ignore or de-emphasize wider

aspects of our humanness. What about our hopes, our fears, our dreams, our feelings, our self-image, the way that we want others to see us? All these things that are associated with the emotional and aspirational levels of a person's experience with a product or service.

More recent HF/HCI approaches have started to take these factors into account. These approaches - variously known as 'pleasure-based', 'affective' or simply 'new' human factors approaches - look at the user holistically. In addition to fitting the design of a product or service to the cognitive and physical characteristics of the person using it, they also look at how the design fits with the person's values, tastes and image. The emphasis here is to look at the relationship between the product and person in all its facets. Certainly, the issue of completing tasks with the product or service may be important - depending on what the product/service is - however there are many other aspects of the design which will influence how enjoyable it is to interact with.

This book makes a very important contribution to this emerging area. The list of contributors includes many of the world's leading HF/HCI practitioners and the contributions cover a range of important issues core to both the theory and practice of creating pleasurable designs.

The chapters contained in this book offer inspiration and guidance as we work to design better and more enjoyable products and services. The authors look at those whom we design for as human-beings rather than just 'users'. This work can help us to create products and services, which promise an enhanced quality of life and a better society for us all.

I wish the book every success.

Pat W. Jordan  
Pittsburgh 12-13-02

# FROM USABILITY TO ENJOYMENT

## INTRODUCTION BY MARK BLYTHE AND PETER WRIGHT

*All I want to do is have a little fun before I die*  
*Says this man next to me out of nowhere*  
*It's apropos of nothing*  
All I Wanna Do: Sheryl Crow.

This book is about enjoyment and Human Computer Interaction (HCI). This may seem like a relatively straightforward topic but humans enjoy so many things that it very quickly becomes tangled and messy. Are we talking about entertainment and play? There's a clear link to technology but games aren't the only applications we enjoy. What about work? People can enjoy that too and a good interface can make a task more enjoyable, but isn't that just usability? Are we talking about cute interfaces or that awful winking paperclip in windows? Is this all about aesthetics? It's possible to enjoy a beautiful web page so long as it doesn't take half an hour to download. Or are we talking about pornography, isn't this the main way an awful lot of people enjoy interacting with their computers?

And what is enjoyment anyway? Is it an experience, is it an emotion, a sensation, a perception, is it a state of mind, is it a state of being? There is an ontological problem inherent in addressing enjoyment and its associated terms. These terms can be organised fairly simplistically by degrees of intensity: satisfaction, gratification, pleasure, joy, euphoria and so on. The settings in which these states commonly occur can also be organised: work and play, games and entertainment, and so on. But this does not answer the question – to what do these states refer - sensations, emotions, perceptions?

These ontological questions are thousands of years old and many literatures address them. This introduction will provide a very broad sketch of some of the areas of literature relevant to these questions, briefly outline previous work in HCI relevant to the project of extending the concept of usability and finally indicate the differing approaches taken by some of the contributing authors in this book.

### *Ontological Problems and Relevant Literatures*

Almost every philosopher who ever philosophised has speculated on how and why we enjoy, or take pleasure, in certain things. For Plato pleasure was the absence of pain; in the *Phaedo* a chain is removed from Socrates' ankle and he remarks on the pleasure of relief. For Aristotle, pleasure was caused by the stimulation of the senses

through action, in the *Nicomachean Ethics* he is able to explain pleasures that involve no absence of pain such as novelty: when something is new the mind is active and stimulated, the next time it is encountered the mind is less aroused so there is less pleasure in the novelty. In the Confessions of St Augustine pleasures are largely “unlawful” or “awful” unless they are pleasures in the contemplation of God. Historians of Philosophy argue that Aristotelian and Christian views of pleasure set the parameters of thought on the subject up until the time of Descartes (Honderich, 1995). The Cartesian distinction between self and world, observer and observed paved the way for the measurement of pleasure and Enlightenment philosophers argued that it was possible to do just that. Jeremy Bentham claimed that pleasures could be judged by intensity and duration and that these could be meaningfully represented on a scale and so measured in a “hedonic calculus” (Honderich, 1995). However, Wittgenstein (1953) argued that when we measure some behavioural correlate of enjoyment, we are not getting at the thing itself - the experience; meaning cannot be measured it has to be grasped. Freud famously argued for the existence of a pleasure principle (and later a death principle) as a motivating force for human action that could not necessarily be known by the conscious mind. Questions on pleasure and enjoyment, then, have a long history. Western philosophy offers no coherent approach and nor should we expect it to. Nevertheless it is possible for these literatures to inspire work in HCI; although the current technological challenges are new the fundamental ontological questions are very old indeed.

Physical and social scientists have also created a large body of work that relates to enjoyment. Neurologists have discovered “pleasure centres” in the septal region of the brain which when electrically stimulated produced enjoyable feelings; when animals were wired up so that they could press a lever and administer this stimulation themselves they did so for hours ignoring food, sex and every other need. (Gregory, 1987). Pleasure then can be regarded as a physical response of the nervous system. But in the twentieth century the apparently simple question – what is an emotion - provoked vexed and contentious debates in psychology. The debate can be broadly characterised as between two schools: the physical and the cognitive. The physical model of emotion, first established by William James, held that “our feeling of (bodily) changes as they occur IS the emotion” (cited: Gregory, 1987). The cognitive model suggested that emotion was a decision-making and evaluative process. During grief, for example, we make evaluative decision about the loss, its severity, its permanence and so on. Later, other positions emerged which combined the physical and cognitive aspects of emotion. John Dewey and others suggested that discrepancies between our expectations and the state of the world produce visceral events and that evaluations of these discrepancies dictate whether the emotion is positive or negative. On a roller coaster for example our expectations about the direction and speed at which we move are disrupted producing a visceral response, this is evaluated in terms of how safe we feel and we love or hate the ride accordingly (Gregory, 1987). Dewey took the strong position that experience and sense making are relational processes, which, when decomposed into their constituent parts, simply disappear (Dewey, 1934). Although chronological accounts

of competing theories can suggest a seamless development of coherent thought, it should be noted that there is still considerable debate in these areas.

There are other large bodies of social and anthropological literature on enjoyment. The sociology of leisure is almost as large as the sociology of work. Play has been seen as one of the most important and fundamentally human of activities. Perhaps the best-known study on the subject of play is *Homo Ludens* by Johan Huizinga. In it he argues that play is not only a defining characteristic of the human being but that it is also at the root of all human culture. He claimed that play (in both representation and contest) is the basis of all myth and ritual and therefore behind all the great “forces of civilised life” law, commerce, art, literature, and science (Huizinga, 1950). Although Huizinga and others make clear the importance of play to the development of civilisation, until recently, little was known about how and why we do it. Piaget argued that the child at play “repeats his behaviour not in any further effort to learn or investigate but for the mere joy of mastering it” (cited, Gross, 1996: 639). He divided play into three stages: mastery play (practice play involving repetitive behaviour) symbolic play (fantasy and role playing) and play with rules (structured games). Mastery and skill development form a point of connection to the work of Csikszentmihalyi who offers one of the few theories of intense or peak experiences in his account of “flow”. After studying diverse groups engaged in self motivating activities like rock climbing Csikszentmihalyi identified the euphoric feeling of “flow” as a common characteristic of their experiences (Csikszentmihalyi, 1975). He was also able to identify the conditions necessary for this feeling to occur. Such models of experience suggest a great many implications for the design of enjoyable products and this work has been drawn on by several of the authors in this book.

There is a further body of literature relevant to the study of enjoyment to be found in the Arts and Humanities. Perhaps the most famous literary movement to focus on pleasure was that of the aesthetes in the late nineteenth century. The protagonist of Huysman’s novel *A Rebours* pursues pleasure so exhaustively that he devotes weeks of study and an entire chapter of description to the subtle differences between scents as he attempts to create a new perfume. The development of enjoyable or pleasurable products and applications can form curious bedfellows. Computer Science departments and industrial developers alike are beginning to employ artists to work with programmers. The Surrealist and Situationist art movements of the nineteen sixties have been drawn on by HCI researchers. The work of literary and art critics is also proving, perhaps surprisingly, useful. Concepts such as dialogism drawn from the work of the Russian literary critic Bakhtin have been used to reason about on line shopping, Dewey’s theories of aesthetics and the co-construction of meaning between the artist, contemplator and art object, have been adapted to consider the enchantments of such technologies as mobile phones. Insights have also been drawn from film criticism and other branches of cultural studies. There is, perhaps, a degree of similarity between HCI and literary and cultural criticism. The HCI specialist is not necessarily a programmer just as the critic is not necessarily a writer. HCI can be seen as a specialised form of reading, where an application or programme is the object of study rather than a static text. literary and cultural studies are, perhaps more than any other discipline, concerned

with enjoyment and pleasures of a very profound kind; it may be for this reason that a number of the authors in this collection draw on these traditions.

### *The limits of Traditional Conceptions of Usability*

In many respects then, the field of Human Computer Interaction is a late-comer to the study of enjoyment. Traditionally, HCI has been concerned with work and work systems, however enjoyment has become a major issue as information and communication technology have moved out of the office and into the living room. Understandings of user concerns derived from studies of the world of work are simply not adequate to the new design challenges. At work we are paid to interact with computers, in the home our motivations are different. Some domestic activities are task based and look very much like work, for example, cleaning and shopping. Clearly efficiency and effectiveness are equally important in the design of technologies to support, on-line shopping for instance, but even here these are not the only important considerations. It is increasingly acknowledged that work tasks are performed better if they are enjoyable. The distinctions between "work" and "leisure" and "tool" and "toy" have been challenged by new approaches to design. Further, many activities in the home are not task related at all: they are leisure activities. Where is the task in listening to a piece of music or looking at a family photo album? Of course the activation and control of media can be thought of as tasks and it is even possible to argue that the task in a leisure activity is to relax; but an entirely task based focus is clearly inappropriate.

It is argued throughout this book that traditional usability approaches are too limited and must be extended to encompass enjoyment. Of course HCI has always been concerned with satisfaction. Indeed "usability" is defined as "the effectiveness, efficiency and satisfaction with which a product is used" (ISO 9241-11). But satisfaction is a relatively narrow term; it is an aspect of the question - does this work? In practice the satisfaction element of usability testing often amounts to investigating whether the product frustrates users or not. It is primarily concerned with the prevention of pain. Since the time of Aristotle this has been a limited view of pleasure. If we are attempting to design enjoyable applications there are further questions to be asked.

There have been many attempts in HCI to put enjoyment into focus (Monk et al, 2002). In the early nineteen eighties Malone published a heuristics for designing *enjoyable* user interfaces (Malone, 1984). Four years later Carroll and Thomas (1988) proposed game-like, metaphoric cover stories for standard process control jobs as a possible means of addressing boredom and vigilance problems inherent in routine tasks. In the early nineteen nineties Brenda Laurel's (1993) *Computers as Theatre* argued that engagement in computer mediated activity is as much about emotional and aesthetic relations as it is about rational and intellectual ones. It is worth noting that this book offered an important warning, Laurel argued that software cannot be made enjoyable with the introduction of gratuitous game-like features. If a student must solve a maths problem before they can play a game in a piece of educational software then either the game or the maths problem is

superfluous: both must be shaped in a “causally related way” (Laurel, 1993: 74). Two years after Laurel’s seminal work, Sherry Turkle explored the social meaning of computers, the culture of computing and its impact on our sense of self in the age of the Internet. Toward the end of the nineties Donald Norman challenged designers to follow three axioms: simplicity, versatility and pleasurable (Norman, 1998). A year later Patrick Jordan’s ground breaking book *Designing Pleasurable Products* explored theoretical models of pleasure drawn from anthropology to make concrete recommendations to product designers in terms of aesthetics and ergonomics. Recently applications have emerged which attempt to make even serious work based activities more enjoyable. Dennis Chao’s PSDoom, for example, is a Unix process manager that adapts the popular first person shoot ‘em up DOOM as the user interface (Chao, 2001) and a good example of Laurel’s causally related enjoyment.

The move from theories and concepts to design is never an easy one whether as a research activity or as a practical application. Bannon (1997) talks of HCI as dwelling in the “great divide” between the social and the technical sciences. This volume is concerned with theories of experience and enjoyment which originate not only from social sciences but also from the arts and humanities and in some senses we have created for ourselves an even larger, albeit more colourful divide. One of the concerns of many of the ‘human scientists’ (psychologists, sociologists etc.) who dwell in the great divide has been to develop theories and methods that make the ‘important things’ of human activity visible and to find ways of ‘translating’ such information into a form that is usable by designers. It is significant that HCI began as a partnership between computer scientists and cognitive psychologists; one of the main attractions of cognitive psychology was precisely its underlying metaphor of the human as an information processor. This greatly reduces the translation problem since at least in principle, both user and system are modelled in the same framework of concepts. The problem however, is the limitations on what such a theory of human activity makes visible. In this volume, several authors allude to the limitations of cognitive science when it comes to dealing with the affective, and many of the chapters represent attempts to understand what needs to be made visible and how we ought to theorise experience.

### *The Breadth of Approaches*

Given the ontological uncertainties outlined above, this book provides an overview of where the HCI community, or a part of it, is in terms of theories and concepts, methods and techniques and case studies. The contributions in the theories and concepts section draw on a very wide literature: computer science, psychology, sociology, philosophy, history, literary and cultural studies. The methods and techniques section begins with adaptations of traditional usability approaches to satisfaction and moves on to more innovative methods. The case studies presented in the final section were chosen to provoke and inspire researchers, designers and product developers. Each section is preceded by a brief introduction which summaries the contributions and provides a road map to the section.

The “absence of pain” model of enjoyment can be thought of as a standard usability approach to pleasure; if an application does not frustrate the user then it is more likely that using it will be enjoyable. Contributions in this book from Pagulayan, Nielsen and also Karat and Karat show how standard usability tests can be adapted to focus on enjoyment. Psychological accounts of pleasure inform contributions by Brantdzaeg et al, Desmet and Hassenzahl. An emphasis on the physical rather than purely cognitive aspects of enjoyment can be found in chapters by Overbeeke et al, Hummels et al and Wensveen et al. Anthropological and social approaches to questions of enjoyment inform chapters by Sengers, Reed, and Blythe and Hassenzahl. The intricacies of social practices are analysed and deconstructed in chapters by Dix, Sykes, Rizzo and Falk in order to generate design implications for technological developments. The influence of art can be seen clearly in the chapter by Hull and Reid, which reflects on a collaborative project with artists, Anderson et al, in the use of techniques inspired by the surrealist movement to develop research methods and by Holmquist et al in the influence of the artist Mondrian on a particular application. Work drawing on literary and film studies can be found in the chapters by Wright and McCarthy on understanding user experience and also in Braun in the development of an interactive story engine. A concern with making serious or work-based activities more enjoyable can be found in many of the contributions and particularly in Hohl et al and Rosson and Carrol.

To return to the questions at the beginning of this introduction - are we talking about work, play, games, entertainment and aesthetics, or what? The answer is yes to all of the above, including the - or what. The subject of pornography however will have to wait for another book.

We have not, as editors, attempted to impose a particular theoretical perspective or engineer the appearance of a coherent approach amongst the authors. In fact many of the authors have radically different approaches, where one attempts to measure another tries to grasp. We believe that this breadth of approaches and subjects reflects the development of a relatively young discipline in a dynamic field of enquiry.

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