Who We Are
Thursday, January 31, 2013
Instructor: Jon Froehlich
TA: Matthew Mauriello
Characteristics of Hall of Fame User Interfaces/User Experiences

- characteristic one

Note: if we can't group edit this textbox, we'll switch to: https://docs.google.com/document/d/1uN6iYU-kl8nyB1m9YkUg-0gs1R2B9Nebsf

Jon

followup discussions, for lingering questions and comments

Click to start a new followup discussion
Characteristics of Hall of Fame User Interfaces/User Experiences

- characteristic one

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Characteristics of Hall of Fame Interfaces / User Experiences

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Characteristics of Hall of Fame User Interfaces/User Experiences

CHARACTERISTICS OF HALL OF FAME

- characteristic one

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Folders:
- hw1
- hw2
- hw3
- hw4
- hw5
- hw6
- hw7
- hw8
- hw9
- hw10
- project
- exam
- logistics
- other

Save as:  
- Question (this needs an answer)
- Note (this doesn't need an answer)

Visible to:  
- Entire class
- Private to instructors and initial poster

Submit Preview as J. Ozymandias Fallick

Follow-Up Discussions, for lingering questions and comments

Click to start a new follow-up discussion

Average Response Time: N/A

Special Mentions:

Whoa! J. Ozymandias Fallick answered Characteristics of Hall of ... in 45 sec. 9 hours ago
Quick inspiration chaser.
Inspiration

What programming languages do you have experience with and feel comfortable using?
What programming languages do you have experience with and feel comfortable using?

- Java: 96%
What programming languages do you have experience with and feel comfortable using?

- Java: 96%
- C: 81%
- Ruby: 79%
- Javascript: 52%
- Assembly: 44%
- Python: 40%
- C++: 39%
- Matlab: 33%
- Other: 23%
- PHP: 21%
- C#: 17%
- Perl: 12%
- Visual Basic: 12%
- Objective-C: 10%
Programming Language

What programming languages do you have experience with and feel comfortable using?

Which of these do I have experience with and feel comfortable using?
What is your favorite programming language?
What is your favorite programming language?

PL Favorite

Which of these is my favorite? ... It depends.
What is your favorite programming language?

Which of these is my favorite? It depends.
Have you ever designed/programmed a user interface?
Have you ever designed/programmed a user interface?

- Yes: 75%
- No: 19%
- I don't know: 6%
Internship Experience

Have you ever had an internship where you were able to apply skills from Computer Science and/or Computer Engineering?

Note: I counted personal projects that resulted in deployed code (e.g., on App Store)
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Work Experience

Software Engineer
HealthSystem Minnesota
CyberOptics Corporation
Intel Corporation
Unisys Corporation
Work Experience

Software Engineer
HealthSystem Minnesota
CyberOptics Corporation
Intel Corporation
Unisys Corporation

Research Assistant
University of California, Irvine
University of Washington, Seattle
Intel Research
Microsoft Research
Telefónica Research
Design4Good
For example.
Kotaro Hara
Home CV Playground

I am a graduate student studying computer science in University of Maryland, College Park, and a member of Human-Computer Interaction Lab. My advisor is Jon Froehlich.

My research focus is in Human-Computer Interaction. My current project involves crowdsourcing in particular. I am currently developing a platform where anonymous crowd-workers can work together to locate city sidewalk accessibility issues by assessing sidewalks in geo-tagged images, such as Google’s Street View imagery. Our goal is to provide location of accessible and inaccessible sidewalks in cities to support people with mobility-impairment.

Publications


Graduate Office, Univ. of Maryland
1151 A.V. Williams Building
College Park, MD 20742

Email: kotaro AT cs.umd.edu
Hara, K. et al. Combining Crowdsourcing and Google Street View to Identify Street-Level Accessibility Problems, CHI 2013
Designing Interactions
Bill Moggridge
Dilbert

Everyone grab an odd-shaped piece of foam and sit down.

We'll continue the design process by pointing to these brainstorm notes and making insightful observations.

The notes are all yellow.

Sweet jeepers!!! You're all engineers!

Dilbert

We've hired the world's most innovative design firm.

We'll observe their successful methods and steal them for our own. Heh heh heh.

Maybe their secret is hiring smart people.

I'm hoping it involves easels.
or otherwise. Engineering is not just about "objective constraints/natural laws."

- I found the collaboration needed between different disciplines in the design process the most interesting part of the article. When I have thought about design in the past, I never considered that the designer would be working alongside anthropologists, sociologists, psychologists and others.
- If a designer can't explain their thoughts, does that make it difficult for designers to collaborate with each other?
- I would have liked to see some examples based in software. The example of the house was a good visual, but I could have related more to a more software oriented example.

Adrian Harding (11 hours ago):

- The hierarchy and the discussion about it surprised me. I had no idea that there were so many levels to design and that it can get rather complex, drawing from so many different disciplines. I sort of thought it was just all up to the designer and engineers before. I'm realizing I have a very naive understanding of this subject. I also thought Charles Eames' definition of design was spot on.
- The discussion on so many different occupations working together makes me wonder why most of our classes do not have any focus on interdisciplinary teamwork. I know that most of us are here as strictly computer science majors, so we don't have a wide breadth of disciplines to draw from in the various CS courses. Still, it seems like in our group projects people could be assigned various roles to focus on (someone on design, someone on audience's needs, someone on coding, etc.). So I guess my question is if interdisciplinary teamwork is so important in the real world, why don't we practice it in school?
- To be honest, I'm not quite sure what conclusion the author was trying to get at with this reading. I know it's an excerpt and a lot of what he said was interesting and useful, but I couldn't see what the overarching point he was trying to make was. It just seemed to be a collection of words on how we define design, what it is, and why we should continue to be inclusive of interaction design. Which I guess is fine. I was just expecting something more.
David Owen (11 hours ago) -

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The Inside Story Of How Microsoft Built The Windows 8 Brand

TO LAUNCH ITS LATEST OS, MICROSOFT HIRED MORE DESIGN AND MARKETING TALENT THAN MOST COMPANIES COULD FATHOM. WE SPOKE WITH WOLFF OLINS, COORDINATORS OF THE REBRANDING, ABOUT THE OVERARCHING STRATEGY.
A Hierarchy of Complexity

ANTHROPOMETRICS

The sizes of people, for the design of physical objects
I didn't like this article, because I felt that it hid beneath words that were assumed to have meaning like "constraints," "synthesis," "tacit knowledge," and "complexity." I feel the assertion that design is not an explicit problem is simply false. "Learning by doing" means reinforcement learning in practice; and reinforcement learning requires an oracle to reward/punish behavior. Regardless of whether people think of design as having explicit knowledge or not, that knowledge exist.

I also felt that the "hierarchy" of different related domains to design was largely synthetic at the levels beyond cognitive psychology. There wasn't a compelling reason why sociology or anthropology or ecology were necessary in the design process; I felt that they were included to signal the author's wordiness and environmentalism rather than to make a good point about design. In general, much of the article seemed oriented towards signalling the unknowable mystique of design rather than clearly communicating some valuable thesis.

- The most interesting part of the article for me was discussing how a large amount of constraints affects both the conscious and subconscious. I love the psychology aspect of design, so their point about how designers have more control over what resides in their subconscious really hit home.

- Why are ecology and anthropology at the top of the hierarchy? I understand their place in design but I don't understand the ordering behind this diagram.

- I didn't care for the interview with Charles Eames. His answers seemed to just be bad attempts at being clever and didn't really contribute anything to what followed it; the introduction just felt like fluff.
Brent Morrow (9 hours ago) -

- The 'Hierarchy of Complexity' demonstrated the importance of interdisciplinary cooperation, among groups, in order to produce a good design. This ideal is not one I've put much thought into, until now, nor one I would have regularly applied in any designs of my own. Furthermore, the whole cultural anthropology perspective was quite intriguing as well. I most certainly would not have considered the potential risks of creating a design that would offend someone of a different belief, culture or nation to my own; very useful.
- The question Bill Moggridge proposed at the end of his article: "[is there] evidence of the beginning of the end of interaction design as a separate discipline." Not only did this question itself get me thinking but if it were possible for several disciplines to eventually be blended into 'one'. Which is quite the contrary to what is normally expected; we need more specialists in their fields.
- Bill Moggridge's attempt at defining what 'design' is was rather trivial. It also seemed a bit unnecessary, though I guess that's to be expected when he'll later be writing out it's 'Hierarchy of Complexity'. I also found his references back to his design ideas of said laptop to be a bit confusing, implying that we're missing some previous context.

Corey Rogers (9 hours ago) -

- I thought the most interesting part of the article was the difficulty we have defining design. You can find endless definitions but I think that because design encompasses so many fields, it is invalid to expect a static definition.
- How did he determine the order for the hierarchy of design? I like the concept but don't follow how he determined the relevant scientific fields and the order. For example, anthropometrics seems irrelevant to many software engineers or web designers.
- Again, one criticism I have of the article is how he laid out the paragraphs describing each successive level in the hierarchy. To me, it didn't lay out a clear connection from one level to the next.

Ahmad Rana (9 hours ago) -

- I thought the most interesting part of the article was the author's notion of complexity, especially the global anthropological aspects. Undoubtedly, an designer must have in-depth & pertinent experience with various cultures in order to have an truly global 'design'.
- After reading the article, I wondered how new or unknown areas and fields of study will impact design? I thought about up and coming research areas that could impact design, such as the gradual move to 3D.
Resolved  ● Unresolved

Matt Song  (49 minutes ago) -
- I thought it was most interesting that he brought up the aspect of constraints as the defining factor of designers, and that constraints are what decides their field.
- How can you decide what is the best set of constraints you want to work with at an early age (product, graphic, architectural)? Is it even possible?
- He talks a lot about constraints, yet does not talk much about adapting to constraints that you are unfamiliar with.

Resolved  ● Unresolved

Michael Ottinger  (39 minutes ago) - * The Hierarchy of Complexity...there are so many aspects in these areas that some might assume are patently simple or obvious. But of course, they can manifest themselves in ways that many may never think. For instance, consider that a lot of high-rise buildings skip floor 13 in their numbering scheme. One might find superstition associated with the number 13 to be ridiculous...but perhaps some of the owners/tenants feel differently?

* As for anthropometrics: how differently would things be designed if humans were of a dramatically different size (say, if the average human were 2ft tall/50lbs weight?) More particularly, what sorts of different engineering constraints would be faced? How would it affect the way buildings are designed/constructed, or the capabilities/efficiency of transportation infrastructure and vehicles?

* The "what is(n't) design?" discussion might have been interesting. But in the first section, he seems to jump back and forth between the abstract idea of design and the assumption that we're talking about the more particular type(s) of design that the text deals with. And he doesn't really use it to make much of a point relating to other content, either.

Resolved  ● Unresolved

Joel Wang  (34 minutes ago) - - The most interesting point was the idea that design is not something that is so simply defined, it is something that is done. This puzzled me a bit, but something in me resonated with it.
- Who can design and what is the optimal number of people on a design team (ex. one/two of each expert?)
- He seems to imply that design is some sort of skill that takes years and years to master, that one cannot simply pick up a pencil and begin to doodle. I think that anyone, given the right circumstances, can be a successful designer, because not all great designs come from professional designers.
A Hierarchy of Complexity

The way the body works, for the design of physical man-machine systems

The sizes of people, for the design of physical objects
Attentions:
Moggridgeinteractions07.pdf
779K  Open  Delete

Followup discussions, for lingering questions and comments

Resolved  Unresolved

Elissa Redmiles  (1 day ago)
- The hierarchy of fields associated with design of products. Specifically I did not know that anthropometrics existed and I had not explicitly thought of physiology in this hierarchy; I found these considerations fascinating in the context of designing products such as games which could be used by both children (small) and adults (large).
- Just because "when a problem is complex, with lots of constraints, it is much easier to recognize a good solution than explain it" does this mean that it is right that we do not explain the reasoning behind "good" design? Who then can decide that it is "good", and how do we distinguish between a matter of taste and an evaluation of "good"-ness?
- I think providing real life examples of design early on would be helpful since the first few pages with their vague and obscure definitions leave the reader confused.

Resolved  Unresolved

Robert Crowell  (1 day ago)
- I like how the article stressed the importance of interdisciplinary cooperation, because not enough of our classes stress this point enough.
- I honestly can not think of a question. My english in the digital world class talked about this subject a lot, so i kind of had most of my questions answered. I know that this is the way that projects and apps should be designed, as well as the fact that a lot of other design projects are being done this way.
- I feel that this article could have talked about how to apply this design concept to Apps and or Software, but really the example of the house can be applied to Software, even though it is easy to see how Anthropometrics can apply to software development, since the last section made that connection when the author was going through the projects in London and could not tell the difference between the two types of projects.
Welcome
I'm an assistant professor in Human-Computer Interaction in the College of Information Studies at the University of Maryland. The overarching goal of my research is to lower barriers to using technology and accessing information. Much of my work focuses on personalized adaptation, which can be a powerful tool to reduce information complexity, improve task efficiency, and facilitate accessibility for a range of abilities and educational levels.

Prospective Students
I am looking for motivated students who share my goal of lowering barriers to technology use. Consider joining us at the HCIL! Check out the School's application procedures here.

Research Overview
Some current and past projects include:

Personalized Interaction

Selected Papers: CHI'04, CHI'08a, CHI'08b, CHI'09a, IJHC'S'10, CHI'11a, CHI'12a.

Can personalized input models improve touchscreen typing? We have looked at the degree to which natural typing patterns differ from one person to the next [CHI2011a] and designed and evaluated novel personalized touchscreen keyboards [CHI2012a]. The short answer: Yes.

I have identified and explored fundamental challenges of personalization in the context of complex software applications. This work has looked at the issue of user versus system control of interface adaptations [CHI'04], introduced a novel technique called ephemeral adaptation [CHI'09a, IJHC'S'09], and identified and characterized the effect that personalization can have on the user's ability to acquire new commands or skills [IJC'S'09]. The benefits of personalization are also more likely to outweigh the costs as task difficulty increases, e.g., when screen size is small [CHI'08b].

Accessibility
Selected Papers: CU'U03, CHI'05, TACCESS'10, UIST'10.
Qualitative analysis of existing material

The following nine slides are courtesy of Professor Findlater

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Qualitative analysis of existing material

Created a dataset of 188 videos

60 disability-related search terms

AAC, accessibility, ALS, amputation, amputee, arthritis, assistive technology, ataxia, augmentative communication, brain injury, cerebral palsy, congenital amputation, congenital amputee, disabilities, disability, disease, dystonia, essential tremor, Friedreich ataxia, Friedreich's ataxia, handicap, hemiplegia, hemiplegic, hydrocephalus, hydrocephaly, Lou Gehrig's, Lou Gehrig's Disease, medical amputation, medical amputee, motor disabilities, motor impairment, MS -microsoft, multiple sclerosis, muscular, muscular dystrophy, myopathy, paralysis, paralyzed, paraplegia, paraplegic, Parkinson's, Parkinson's disease, physical disabilities, psychomotor agitation, quadriplegia, quadriplegic, rehabilitation, sclerosis, seizure disorder, SMA, special needs, spina bifida, spinal, spinal cord injury, spinal muscular atrophy, stroke, TBI, traumatic brain injury, tremor, wheelchair

9 technology-related search terms

touch screen, touchscreen, smartphone, tablet, app, iPad, iPhone, iPod

101 unique users

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Qualitative analysis of existing material

Created a dataset of 188 videos

<table>
<thead>
<tr>
<th>Primary Disability</th>
<th>Number of Videos (% of 188)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral Palsy</td>
<td>46 (24%)</td>
</tr>
<tr>
<td>Spinal Muscular Atrophy (SMA)</td>
<td>32 (17%)</td>
</tr>
<tr>
<td>Quadriplegia / Hemiplegia</td>
<td>14 (7%)</td>
</tr>
<tr>
<td>Hydrocephaly</td>
<td>7 (4%)</td>
</tr>
<tr>
<td>Spinal cord injury</td>
<td>6 (3%)</td>
</tr>
<tr>
<td>Seizure disorder</td>
<td>6 (3%)</td>
</tr>
<tr>
<td>Other (e.g., congenital or medical amputation, muscular dystrophy, multiple sclerosis, etc.)</td>
<td>78 (41%)</td>
</tr>
<tr>
<td>Unable to determine</td>
<td>39 (21%)</td>
</tr>
</tbody>
</table>

Almost half (47% were small children)

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Nearly all videos (92%) showed direct interaction.

Example problems with finger input:

- Hitting with fingernail
- Excessively long dwell times
- Problematic dragging and sliding motions

“[He] has been doing a much better job of touching the screen with the pad of his finger, instead of his nail.” (V8).
Unconventional Input

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Homemade Indirect Input

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Slings to Support Arms & Legs

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Screen Protectors

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
Physical Barriers

Anthony, L., et al., Analyzing user-generated YouTube videos to understand touchscreen use by people with motor impairments, CHI2013
HCI addresses the dynamic co-evolution of the activities people engage in and experience, and the artifacts — such as interactive tools and environments — that mediate those activities.

Professor John M. Carroll
Information Sciences and Technology
Pennsylvania State University
Quote from: http://www.interaction-design.org/encyclopedia/human_computer_interaction_hci.html
The **Task-Artifact** Cycle

- **Tasks**
- **Artifacts**
- **Requirements and design ideas**

---

The **Task-Artifact Cycle**

- **Tasks**
  - Requirements and design ideas

- **Artifacts**
  - Adoption, appropriation, use

A Hierarchy of Complexity

- **Psychology**: The way the mind works, for the design of human-computer interactions.
- **Physiology**: The way the body works, for the design of physical man-machine systems.
- **Anthropometrics**: The sizes of people, for the design of physical objects.

Bill Moggridge, Designing Interactions, p. 652
A **Hierarchy of Complexity**

- **Sociology**: The way people relate to one another, for the design of connected systems.
- **Psychology**: The way the mind works, for the design of human-computer interactions.
- **Physiology**: The way the body works, for the design of physical man-machine systems.
- **Anthropometrics**: The sizes of people, for the design of physical objects.

*Bill Moggridge, Designing Interactions, p. 652*
A Hierarchy of Complexity

- **Anthropology**: The human condition, for global design
- **Sociology**: The way people relate to one another, for the design of connected systems
- **Psychology**: The way the mind works, for the design of human-computer interactions
- **Physiology**: The way the body works, for the design of physical man-machine systems
- **Anthropometrics**: The sizes of people, for the design of physical objects
A Hierarchy of Complexity

ECOLOGY
The interdependence of living things, for sustainable design

ANTHROPOLOGY
The human condition, for global design

SOCIOLGY
The way people relate to one another, for the design of connected systems

PSYCHOLOGY
The way the mind works, for the design of human-computer interactions

PHYSIOLOGY
The way the body works, for the design of physical man-machine systems

ANTHROPOMETRICS
The sizes of people, for the design of physical objects
Louis Teng (13 hours ago) -
- For me, the most interesting part of the article was Charles Eames' responses to Madame Amic's questions because they were really spot on with my thoughts on the definition of design.
- Page 659 states "everything else has to work before design has a chance." This makes it sound as if design comes into play only after the affordability, performance, and usability have been considered but are these not some of the constraints placed on design in the first place?
- The text seems to lack concrete examples to clarify what the author is trying to say, instead relying more on analogies such as the pinball machine and the iceberg.

Ted Smith (13 hours ago) -
- The concept of design as a constraint solving problem was novel and a useful characterization of the problem.
- Computers are good at solving constraints; fast constraint solvers are commonplace and enable a wide variety of everyday computing tasks. Are there constraint-solving systems that perform traditionally "intuitive" and "subjective" design tasks?

I didn't like this article, because I felt that it hid beneath words that were assumed to have meaning like "constraints," "synthesis," "tacit knowledge," and "complexity." I feel the assertion that design is not an explicit problem is simply false. "Learning by doing" means reinforcement learning in practice; and reinforcement learning requires an oracle to reward/punish behavior. Regardless of whether people think of design as having explicit knowledge or not, that knowledge exist.

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Luke Fritts (12 hours ago) -
- The most interesting part of the article for me was discussing how a large amount of constraints affects both the conscious and subconscious. I love the psychology aspect of design, as they point about how designers have more control now what resides in subconscious.
Understanding the relevancy and importance of **anthropology** in design
What is this?
LG Electronics has launched Mecca indicator mobile handset, the F7100 Qiblah phone.

LG Electronics has introduced to the market the Qiblah phone (model:LG-F7100) which comes complete with embedded compass, direction indication and prayer time alarm (Azan feature), usable in 500 cities worldwide. LG Electronics has launched the Mecca indicator phone in UAE, Saudi Arabia, Iran, and other Middle East nations, as well as North African nations. LGE held a launching ceremony in Dubai, on July 20th.

The LG-F7100 model indicates the direction of Mecca to the users when they input their location in about 500 cities worldwide. This is different from the Mecca indicator phone unveiled last year that required the users to input their location and adjust the compass, which was provided as an accessory, to the north. The new model also informs the users of their prayer time (Azan time) five times a day.

Muslims perform their obligatory Salat prayers five times a day (sunrise, noon, afternoon, sunset, and midnight). Likewise, they have to face Kaaba, an old temple in Mecca, and this Mecca indicator phone enables them to identify the direction easily, including in areas such as deserts.
PICTORIAL DEPTH PERCEPTION IN SUB-CULTURAL GROUPS IN AFRICA*

National Institute for Personnel Research, Johannesburg, South Africa

W. Hudson

A. INTRODUCTION AND PROBLEM

Protocols from a picture projection test administered in 1957 to a group of 85 Bantu factory workers of different tribal origins, educational levels, and degrees of urbanisation contained interesting perceptual information. The test, designed to obtain information on aspirational levels in the occupational situation, consisted of 14 pictures. These pictures were unambiguous, half-tone, graphic representations of a variety of situations in which the traditional Bantu tribal, family, material culture, and spiritual values were
Western culture is book-learned, characterised by dependence upon the written word, illustration, diagram, photograph. Visual presentation is a common mode in the classroom, in the factory, and on the hoardings. Educational and training programmes, advertisements, safety and health propaganda, and much current didactic literature make use of pictorial material. Certain characteristic perceptual habits have become normal for Western culture, and for the groups professing it. Pictorial representation of a three-dimensional scene requires the observance and acceptance of certain artistic or graphic conventions. Pictorial depth perception depends upon response to these conventional cues in the two-dimensional representation. There are three such cues concerned with form only, viz., object size, object superimposition or overlap, perspective. In the visual world, of two objects of equal size, that object nearer the observer is larger. When one object overlaps another the superimposed object is nearer to the observer. Parallel lines tend to converge with distance from the observer. In the two-dimensional representation of the three-dimensional scene, foreground objects are depicted larger than background items. Superimposed objects are perceived as nearer. Pictorial structuring by perspective technique is accepted as a convention for depicting distance. The incidental evidence furnished on Pictorial T.A.T., by African samples indicates that these pictorial conventions are not accepted in such sub-cultural groups. The present investiga-
Real space and represented space: Cross-cultural perspectives

J. B. Deregowski
Department of Psychology, King's College, University of Aberdeen, Old Aberdeen AB9 2UB, Scotland
Email: j.b.deregowski@abdn.ac.uk

Abstract: This paper examines the contribution of cross-cultural studies to our understanding of the perception and representation of space. A cross-cultural survey of the basic difficulties in understanding pictures - ranging from the failure to recognize a picture as a representation to the inability to recognize the object represented in the picture - indicates that similar difficulties occur in pictorial and nonpictorial cultures. The experimental work on pictorial space perception in “remote” populations and the study of the perceptual illusions. A comparison of the findings on pictorial space perception with those on real space perception and perceptual constancy suggests that cross-cultural differences in the perception of both real and representational space involve two different types of skills; those related exclusively to either real space or representational space, and those related to both. Different cultural groups use different skills to perform the same perceptual tasks.

Keywords: constancy; cultural differences; depth perception; field-dependence; form perception; illusions; perspective; picture perception; representation; space perception; vision

1. Introduction

This paper will examine cross-cultural studies of the perception of real space and representational space and would be wrong, because although one can treat the two as independent and conduct investigations confined entirely to one of them, pictorial space is, despite claims by others, often represented in all representational tasks.
Understanding the relevancy and importance of ecology in design
What is Design?

Design is an act of choosing among or informing choices of future ways of being.

Professor Eli Blevis
Human-Computer Interaction Design
School of Informatics and Computing
Indiana University
Quote from: Sustainable interaction design: invention & disposal, renewal & reuse, CHI2007
Sustainable Interaction Design: Invention & Disposal, Renewal & Reuse
Eli Blevis
School of Informatics,
Indiana University at Bloomington, Indiana USA
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ABSTRACT
This paper presents the perspective that sustainability can and should be a central focus of interaction design—a perspective that is termed Sustainable Interaction Design (SID). As a starting point for a perspective of sustainability, design is defined as an act of choosing among or informing choices of future ways of being. This perspective of sustainability is presented in terms of design values, methods, and reasoning. The paper proposes (i) a rubric for understanding the material effects of particular interaction design cases in terms of forms of use, reuse, and disposal, and (ii) several principles to guide SID. The paper illustrates—with particular examples of design critique for interactive products and appeals to secondary research—how two of these principles may be applied to move the effects of designs from less preferred forms of use to more preferred ones. Finally, a vision for incorporating sustainability into the research and practice of interaction design is described.

important design authors—principally by Tony Fry’s [14] notion of defuturing in his book “A New Design Philosophy: An Introduction to Defuturing” and as well by Willis’ [47] notion of ontological designing, which itself owes to Winograd & Flores’ [49] “Understanding Computers and Cognition: A New Foundation for Design” as well as to Heidegger’s [18] essay “The Question concerning technology”. Alexander’s [1] recent work on structure-preserving transformations is also an inspiration. This definition of design from the perspective of sustainability serves as a lens through which design values, design methods, and designs themselves may be evaluated, especially in the context of interaction design.

Sustainability as a notion of viable futures can be defined to include aspects of the environment, public health, social equality and justice, as well as other conditions and choices about humanity and the biosphere [14]. In what follows, the focus is primarily on environmental sustainability and the link between interactive technologies and the use of technologies can be used to promote more sustainable behaviors and—with more emphasis here—from the point of

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Sustainable Interaction Design
Invention & Disposal
Renewal & Reuse

ACM Classification Keywords
Design Theory
In Blevis’s paper, he argues that sustainability is inherent to HCI and claims that it should be a central focus of interaction design:

*The focus [of this paper] is primarily on environmental sustainability and the link between interactive technologies and the use of resources, both from the point of view of how interactive technologies can be used to promote more sustainable behaviors and—with more emphasis here—from the point of view of how sustainability can be applied as a critical lens to the design of interactive systems themselves.*

Blevis’ paper considers sustainability as core to interaction design—indeed, he defines design as “an act of choosing among or informing choices of future ways of being” (2007). From Blevis’ perspective, a designer is centrally placed and perhaps ethically compelled to consider the environmental consequences of their design decisions because those decisions shape behavior. Although Blevis points to the role of interactive technologies in promoting sustainable behaviors (which is largely the focus of this dissertation) his primary focus is in discussing how sustainability can be applied to the design of interactive systems themselves. For example, he argues that designers should address the current movement towards creating technology for obsolescence, which creates a cycle of manufacturing and disposal that is harmful for the environment, rather than specifically using technology to persuade individuals to act more proenvironmentally.

in the HCI and UbiComp research communities. The subfield involves a variety of environmentally oriented application areas such as waste management, water conservation, energy efficiency, and more.
DESIGNING INTERACTIONS

BILL MOGGRIDGE

Who is this guy?
What does he know?
For Tuesday

1. Watch and respond to IDEO video.

2. Reading Response:
   Excerpt from Tom Kelley’s *The Art of Innovation*

3. Begin work on:
   - Brainstorming 10 project ideas
   - Writing draft project pitch
   More details will be posted to Piazza