week
06

Human Centered Design
Designing for Human Experiences
Lecture Outline

• Experience Prototyping [Buchenau & Fulton Suri, 2000]
• Designing for Experiencing [Sanders, 2002]
• Method Cards [IDEO]
• Thoughtless Acts [Fulton Suri & IDEO, 2000]
Experience Prototyping

Buchenau & Fulton Suri (2000)

Experience is a dynamic, complex, and subjective phenomenon. It depends upon the perception of multiple sensory qualities of a design, interpreted through filters relating to contextual factors.
Experience Prototyping

The experience of even simple artifacts does not exist in a vacuum but, rather, in dynamic relationship with other people, places and objects. Additionally, the quality of people’s experience changes over time as it is influenced by variations in these multiple contextual factors.
Designing Human Activities, Not Just Tools
Experience Prototyping

**Experiential Aspect**

Emphasis on the *experiential* aspect of representations, which is needed to successfully (re)live or convey an experience with a product, space or system.

Any kind of representation, in any medium, designed to understand, explore, or communicate what it might be like to engage with the product, space or system we are designing.

Buchenau & Fulton Suri (2000)
Experience Prototyping

Understanding User Experiences

What are the contextual, physical, temporal, sensory, social, and cognitive factors we must consider as we embark on design? What is the essence of the existing user experience? What are essential factors that our design should embrace?
Design for Experiencing

Sanders (2002)

Design people’s experiences of things, actions, and places. Experiencing is a constructive activity. Need to access people’s experiences (past, current, and potential) as the source of inspiration and ideation for design.
Learn from What People...

- Say
- Think
- Do
- Use
- Know
- Feel
- Dream

Sanders (2002)
Learn from What People...

Explicit:
What people are able to express in words, but only what they want us to hear.

Observable:
Watching what people do and seeing what they use provides us with observable information.

Tacit and Latent:
Knowledge that can’t readily be expressed in words, that can reveal latent needs.

Say
Think
Do
Use
Know
Feel
Dream

Sanders (2002)
Learn, Look, Ask, & Try
IDEO Method Cards

Tools for keeping people at the center of the design process.
IDEO Method Cards

**Learn:**
Analyze the information you’ve collected to identify patterns and insights.

**Look:**
Observe people to discover what they do rather than what they say they do.

**Ask:**
Enlist people’s participation to elicit information relevant to your project.

**Try:**
Create simulations to help empathize with people and to evaluate proposed designs.
**Learn: Affinity Diagrams**

**Affinity Diagrams**

HOW: Cluster design elements according to intuitive relationships such as similarity, dependence, proximity, etc.

WHY: This method is a useful way to identify connections between issues and reveal innovation opportunities.

Clustering the elements related to transporting the family helped the IDEO team to discover some significant opportunities for stroller design.
Learn: Character Profiles

Character Profiles

HOW: Based on observations of real people, develop character profiles to represent archetypes and the details of their behavior or lifestyles.

WHY: This is a useful way to bring a typical customer to life and to communicate the value of different concepts to various target groups.

In order to understand different types of customers and how to target them, IDEO developed four characters for a pharmacy wanting to reach the male beauty-product market.

“Tried it once, never again”
“Don’t let me go without my vitamins”
“I only really take vitamin C when I’ve got a cold”
“Keeping fit isn’t that important to me”
“Every year I shave off a few inches”
“I never buy after shave...I get it for Christmas”
Learn: Error Analysis

HOW: List all the things that can go wrong when using a product and determine the various possible causes.

WHY: This is a good way to understand how design features mitigate or contribute to inevitable human errors and other failures.

The IDEO team used error analysis on a remote-control concept in order to maximize the functionality of each button's size, shape, and texture.
Learn: Cross-Cultural Comparisons

HOW: Use personal or published accounts to reveal differences in behaviors and artifacts between national or other cultural groups.

WHY: This helps teams to understand various cultural factors and the implications for their projects when designing for unfamiliar or global markets.

In designing a messaging device for an international market, IDEO compared communication methods across cultures.
IDEO Method Cards

Learn:
Analyze the information you’ve collected to identify patterns and insights.

Look:
Observe people to discover what they do rather than what they say they do.

Ask:
Enlist people’s participation to elicit information relevant to your project.

Try:
Create simulations to help empathize with people and to evaluate proposed designs.
Look: A Day in the Life

A Day in the Life

HOW: Catalog the activities and contexts that users experience throughout an entire day.

WHY: This is a useful way to reveal unanticipated issues inherent in the routines and circumstances people experience daily.

IDEO asked potential wearers of a drug-delivery patch to document their daily behaviors including those that might affect the function of the patch – getting wet, snagging on clothing, etc.
Look: Personal Inventory

HOW: Document the things that people identify as important to them as a way of cataloging evidence of their lifestyles.

WHY: This method is useful for revealing people’s activities, perceptions, and values as well as patterns among them.

For a project to design a handheld electronic device, the IDEO team asked people to show and describe the personal objects they handle and encounter every day.
IDO Method Cards

**Look**: Behavioral Mapping

Behavioral Mapping

**HOW**: Track the positions and movements of people within a space over time.

**WHY**: Recording the pathways and traffic patterns of occupants of a space helps to define zones of different spatial behaviors.

Tracking the paths of visitors helped designers to identify the traffic spots and the vacant, underused areas of a museum lobby.
Look: Time-Lapse Video

How: Set up a time-lapse camera to record movements in a space over an extended period of time.

Why: Useful for providing an objective, longitudinal view of activity within a context.

The IDEO team recorded the activity of museum visitors over several days to learn how to improve space layout.
IDEO Method Cards

Learn: Analyze the information you’ve collected to identify patterns and insights.

Look: Observe people to discover what they do rather than what they say they do.

Ask: Enlist people’s participation to elicit information relevant to your project.

Try: Create simulations to help empathize with people and to evaluate proposed designs.
IDEO Method Cards

**Ask**: Collage

**Collage**

**HOW**: Ask participants to build a collage from a provided collection of images, and to explain the significance of the images and arrangements they choose.

**WHY**: This illustrates participants’ understanding and perceptions of issues and helps them verbalize complex or unimagined themes.

Participants were asked to create a collage around the theme of sustainability to help the IDEO team understand how new technologies might be applied to better support people’s perceptions.
IDEO Method Cards

**Ask:** Camera Journal

**Camera Journal**

**HOW:** Ask potential users to keep a written and visual diary of their impressions, circumstances, and activities related to the product.

**WHY:** This rich, self-conducted notation technique is useful for prompting users to reveal points of view and patterns of behavior.

The IDEO team designing a travel information system distributed camera journals to families taking car trips to capture map reading and other car travel behavior.
IDEO Method Cards

**Ask: Unfocus Group**

**Unfocus Group**

**HOW:** Assemble a diverse group of individuals in a workshop to use a stimulating range of materials and create things that are relevant to your project.

**WHY:** Encourages rich, creative, and divergent contributions from potential users, releases inhibitions, and opens up new thinking.

An IDEO team invited a foot-fetishist, an artist, a body-worker, a podiatrist and others to work together to explore and build concepts for a new range of fashion sandals.
IDEO Method Cards

**Ask:** Extreme User Interviews

**Extreme User Interviews**

**HOW:** Identify individuals who are extremely familiar or completely unfamiliar with the product and ask them to evaluate their experience using it.

**WHY:** These individuals are often able to highlight key issues of the design problem and provide insights for design improvements.

By understanding the role and mindset of the youngest family member, the IDEO team uncovered new product design opportunities for household cleaning.

[Image of a child standing next to a vacuum cleaner]
IDEO Method Cards

Learn:
Analyze the information you’ve collected to identify patterns and insights.

Look:
Observe people to discover what they do rather than what they say they do.

Ask:
Enlist people’s participation to elicit information relevant to your project.

Try:
Create simulations to help empathize with people and to evaluate proposed designs.
**Empathy Tools**

**HOW:** Use tools like clouded glasses and weighted gloves to experience processes as though you yourself have the abilities of different users.

**WHY:** This is an easy way to prompt an empathic understanding for users with disabilities or special conditions.

IDEO designers wore gloves to help them evaluate the suitability of cords and buttons for a home-health monitor designed for people with reduced dexterity and tactile sensation.
IDEO Method Cards

**Try:** Bodystorming

**Bodystorming**

**HOW:** Set up a scenario and act out roles, with or without props, focusing on the intuitive responses prompted by the physical enactment.

**WHY:** This method helps to quickly generate and test many context- and behavior-based concepts.

Bodystorming various ways of sleeping in airplanes helped the IDEO design team to generate a wide variety of concepts for an airplane interior.

www.ideo.com
Try: Behavior Sampling

Behavior Sampling

HOW: Give people a pager or phone and ask them to record and evaluate the situation they are in when it rings.

WHY: This is a useful way to discover how products and services get integrated into people’s routines in unanticipated ways.

Developing an implantable defibrillator system, the IDEO team distributed pagers to the client team to signal a defibrillating shock. This evoked deep empathy for the patient’s everyday experience.
IDEO Method Cards

**Try: Role-Playing**

---

**Role-Playing**

**HOW:** Identify the stakeholders involved in the design problem and assign those roles to members of the team.

**WHY:** By enacting the activities within a real or imagined context, the team can trigger empathy for actual users and raise other relevant issues.

Designing a medical device, the IDEO team role-played a situation involving a doctor, a nurse, a patient, and an anesthesiologist to simulate the interdependent tasks demanded of the operating room staff.
More and more we find ourselves designing complex and dynamic interactions with converging hardware and software, spaces, and services.

The designer needs to focus on "exploring by doing" and actively experiencing the subtle differences between various design solutions.
Multiple disciplines are needed to solve the design problems of today — e.g. interaction design, industrial design, designers of environments, human factors specialists, mechanical and electrical engineers.

A powerful asset to have tools and techniques which create a shared experience, providing a foundation for a common point of view.
Thoughtless Acts

Fulton Suri & IDEO (2000)

All those intuitive ways we adapt, exploit, and react to things in our environment; things we do without really thinking.
Thoughtless Acts

“In daily life we make interpretations about the stuff around us all the time – how it might work and what we can do with it. We develop an exquisite awareness of the possibilities and sensory qualities of different materials, forms, and textures. Understanding these intuitive interpretations might be a significant source of insight for designers.”
Thoughtless Acts

**Reacting?** Tactile and visual encouragement to stay on track?
Thoughtless Acts

Reacting? Avoiding surfaces. Barely conscious adjustments in paths chosen?
Thoughtless Acts

**Reacting?** How many ways to keep hands free on the go?
Thoughtless Acts

**Reacting?** What other ways to encourage people to stop and shop?
Thoughtless Acts

**Reacting?** For comfort and relief, our feet seek a variety of surfaces.
Thoughtless Acts

Reacting? Items are safe and remembered within our personal space.
Thoughtless Acts

**Responding?** Remembering or pointing to your place after interruptions.
Thoughtless Acts

**Responding?** Easy way to carry the elements or a reminder of an intentional pairing of tools?
Thoughtless Acts

**Responding?** Door rail swing, unconscious stretch, better balance?
Thoughtless Acts

Responding? Simple analog tools for a more direct indication.
Thoughtless Acts

Responding? Can spatial elevation enhance social, physical, and emotional experience?
Thoughtless Acts

**Co-opting?** Airport office and hands free journey.
Thoughtless Acts

**Co-opting?** A coffee cup set inside a roll of tape to steady it.
Thoughtless Acts

Co-opting? An active storage mode.
Thoughtless Acts

**Co-opting?** Extending personal space.
Thoughtless Acts

Co-opting? Incidental benefits. Storage with the benefit of sun and fresh air.
Thoughtless Acts

**Exploiting?** Environmental features act as breaks for carts. Ideas for built-in functions?
Thoughtless Acts

Exploiting? Butter spatula and handle.
Thoughtless Acts

**Exploiting?** Eating pizza on the go. Cactus bulletin board.
Thoughtless Acts

**Adapting?** When do utilitarian tools become wearable? Personal and decorative?
Thoughtless Acts

**Conforming?** Common view point, stride, and rhythm.
Thoughtless Acts

**Conforming?** Trash stash.
Thoughtless Acts

**Signaling?** Shared tools often need status/progress indicators to let others know.
Thoughtless Acts

**Signaling?** Status indicators can save disappointment. Evident from a distance.
Inviting Curiosity

“The key is looking carefully at what people actually do in various situations and asking ourselves questions such as these to explain what we see: Why has someone placed this object here? What are those people doing and why are they grouped like that? Why is it that people apparently avoid being here? Curiosity will reveal meaning behind these nonspectacular interactions that take place around us all the time.”
Examining these everyday interactions, we discover a lot about how we engage, adapt and make sense of our surroundings. We see directly how design plays into our lives, how we actively shape our environment, and how we in turn are shaped by it. Observing such interactions can inspire new design opportunities and guide better solutions in valuable ways.
Thoughtless Acts

Opportunities for Design

Everywhere we look there is evidence of people’s creativity in reinterpreting and adapting things, improvising solutions to make up for something that’s missing or poorly designed. We should look for patterns that point to a universal need. When we dig deep enough, behavior that might at first seem arbitrary, surprising, or idiosyncratic, usually has an insightful explanation.
http://www.flickr.com/groups/thoughtlessacts/pool/
Capture Thoughtless Acts

Capture Thoughtless Acts you see and post them on the course web.

Due Monday October 22. Discussion on Tuesday October 23.
Midterm Project

• Feedback for your midterm project is up on the course website.
• Take a critical look at your interaction loop and discuss why tangibility matter.
• Tuesday October 9: Progress sketches due (post your sketches on the course website).
Thanks!