

# week 07



# Design and Innovation

---

Technology, Need, and Concept

# Lecture Outline

---

- Different forces that drive design
- Strangely Familiar: Design examples
- Avoiding “Cargo Cult Design”

# What Drives Design?

Different forces that drive design [Ishii, 2006]

---

Technology driven design

Need driven design

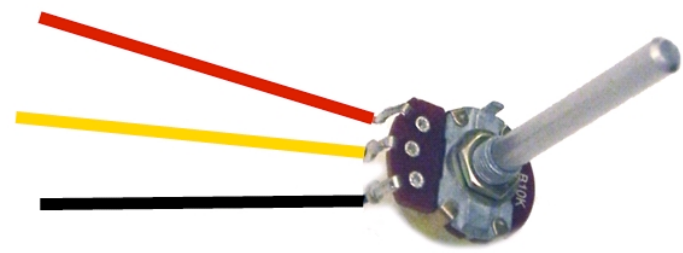
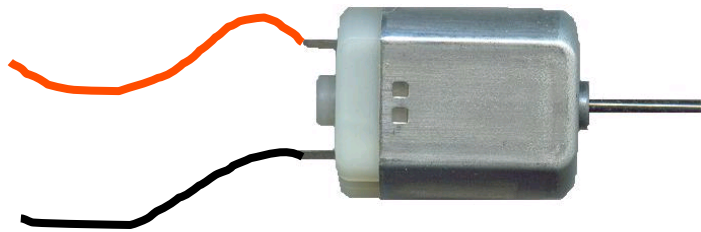
Concept driven design

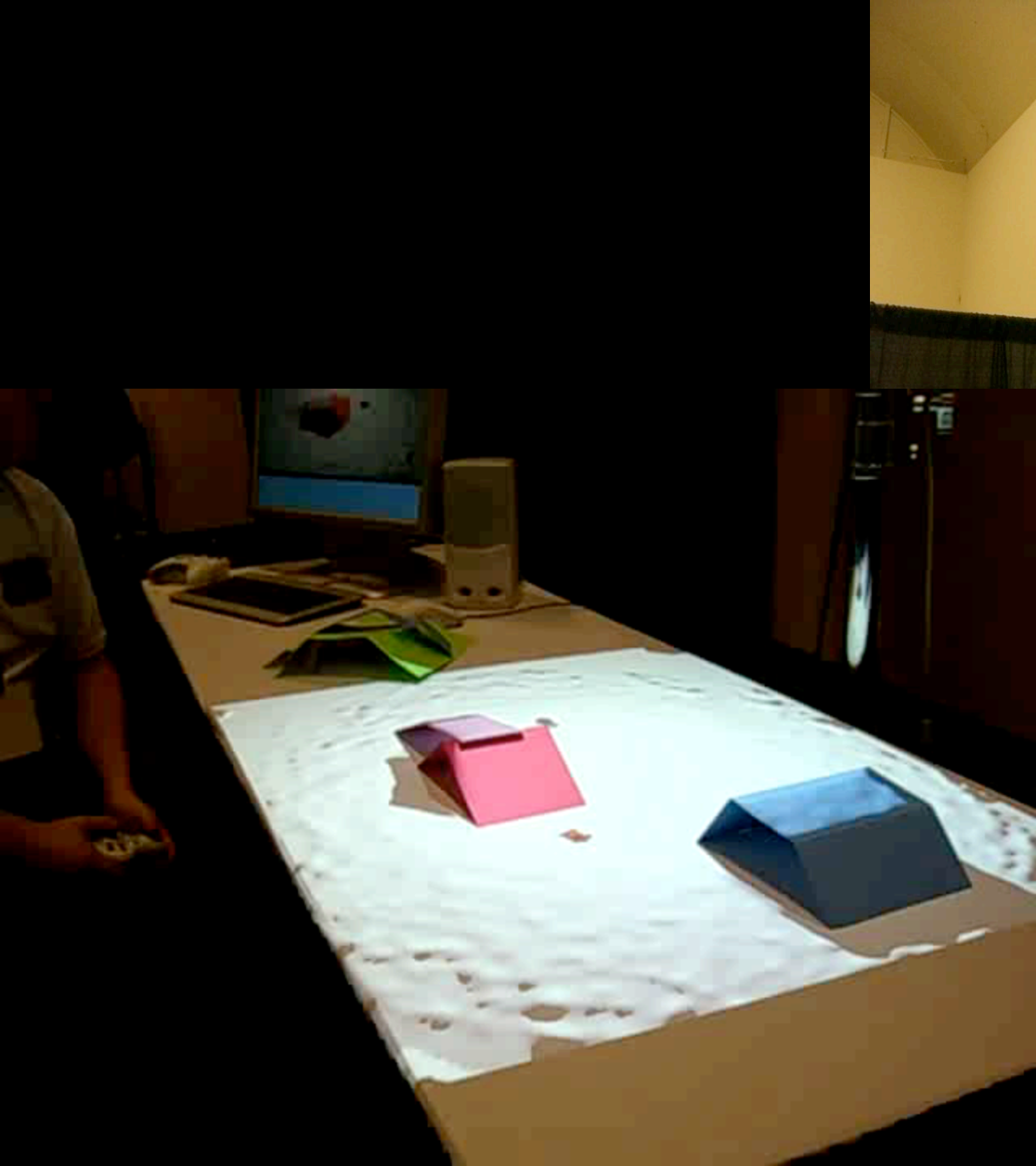
# Technology Driven Design

Begin with an innovative technology, apply it to an application.

# Technology Driven Design

---







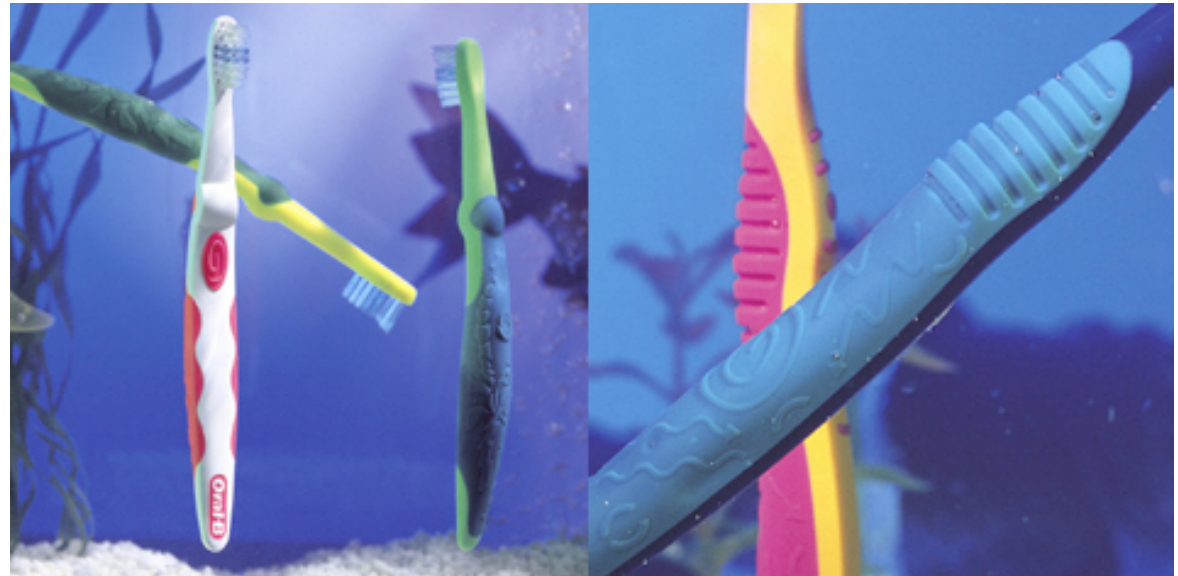
# Need Driven Design

Identify an existing problem or set of problems, shape process around solving these problems

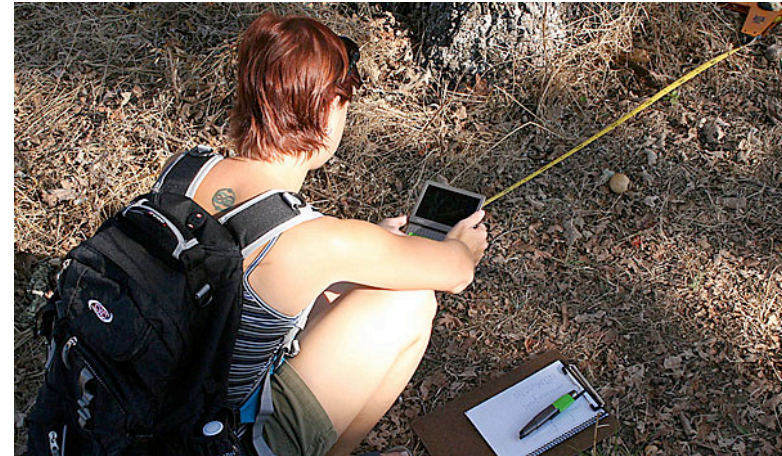
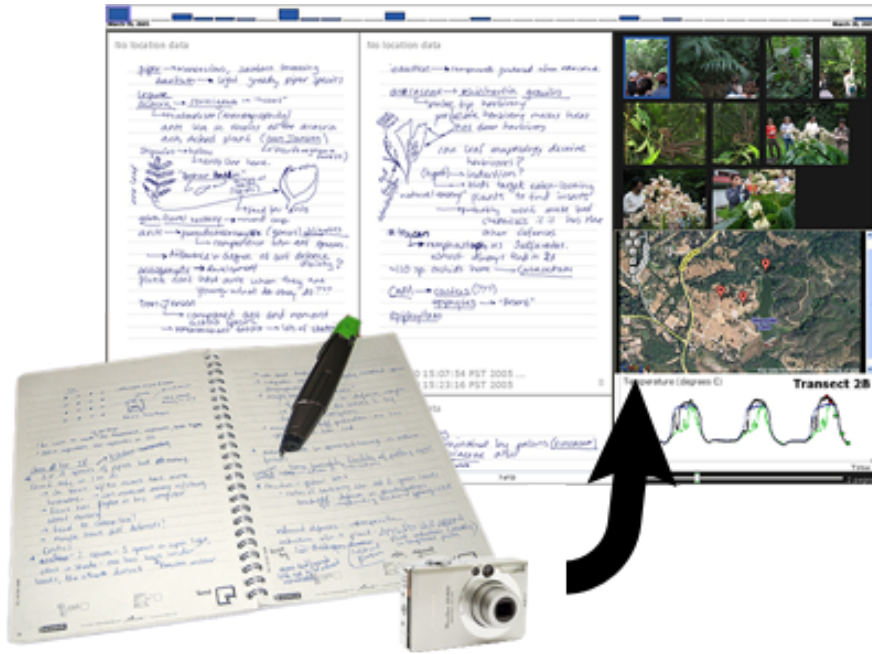


# Need Driven Design

---

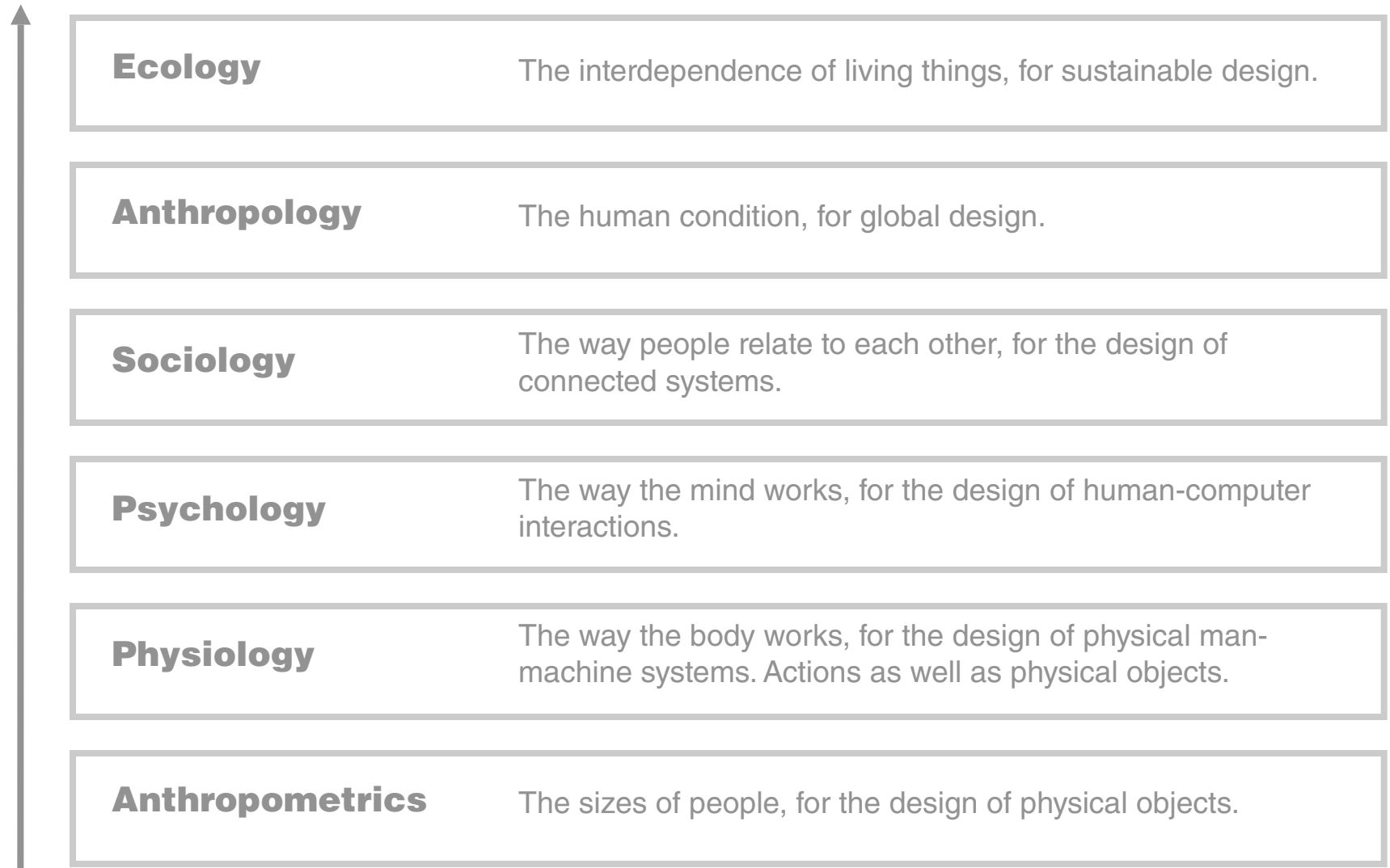


# Need Driven Design



ButterflyNet: A Mobile Capture and Access System for Field Biology Research [Yeh et al., 2005]

## “Hierarchy of Complexity” [Moggridge, 2006]



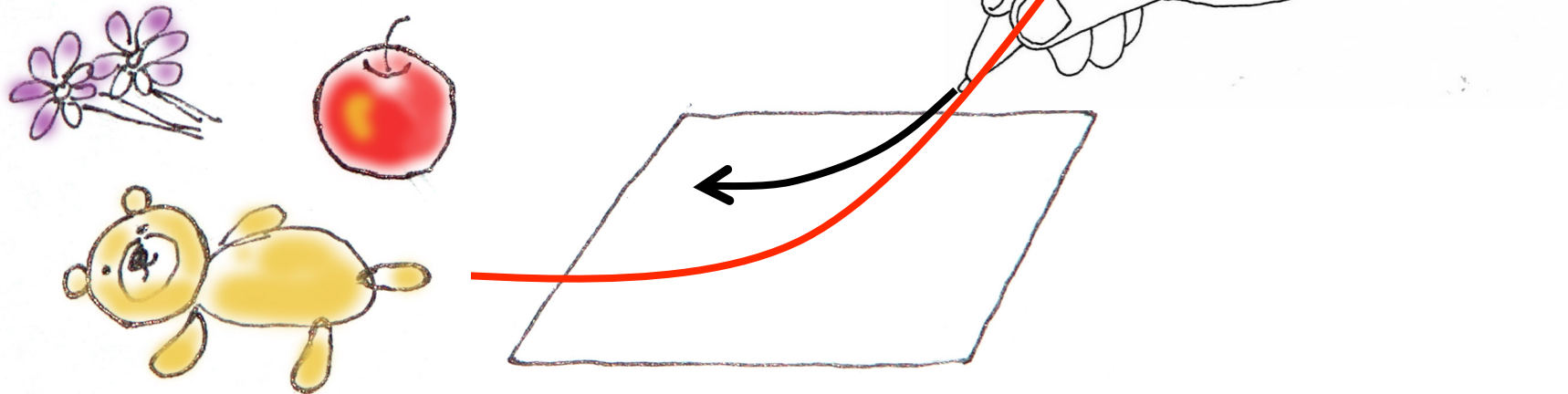
# Concept Driven Design

Define a new vision, design artifacts which embody that concept.

Field research may embrace existing conditions and situations but may not necessarily alter our relationship to everyday objects or challenge conventional ideas about design. [Blauvelt, 2004]



# Where does ink come from?



Can we use attributes of our environment as ink?

# Concept Driven Design

---

We need to consider and ask questions about the very stuff of everyday life, the objects around us, the places we inhabit, the habits we perform. To question that which seems to have ceased forever to astonish us. [Blauvelt, 2004]

# Strangely Familiar

“Strangely Familiar” projects force us to look at our everyday world anew, challenge our own presumptions about what is possible, and reconsider our relationship to things that once seemed so familiar.

[Blauvelt, 2004]



Concept Driven Design

# Strangely Familiar 1

---

## Ritual of Use

Polemical objects that force us to reconsider our relationship to products and dictate new rituals of use and expectations of performance.

**The Placebo Project** [Dunne & Raby, 2001]



**Compass Table** investigates people's attitudes, experiences, and relationships to electromagnetic fields emitted by consumer goods.

## Anti-Social Light [Anastassiades, 2001]



Illuminates the servile role of products, creating a world in which users cannot simply command an action to occur, but rather one in which their own behavior produces specific effects.

Concept Driven Design

# Strangely Familiar 2

---

## Portability

Portable structures that respond to nomadic conditions of lightness and ephemerality, thereby undermining long-held architectural principles of site-specificity and permanence.

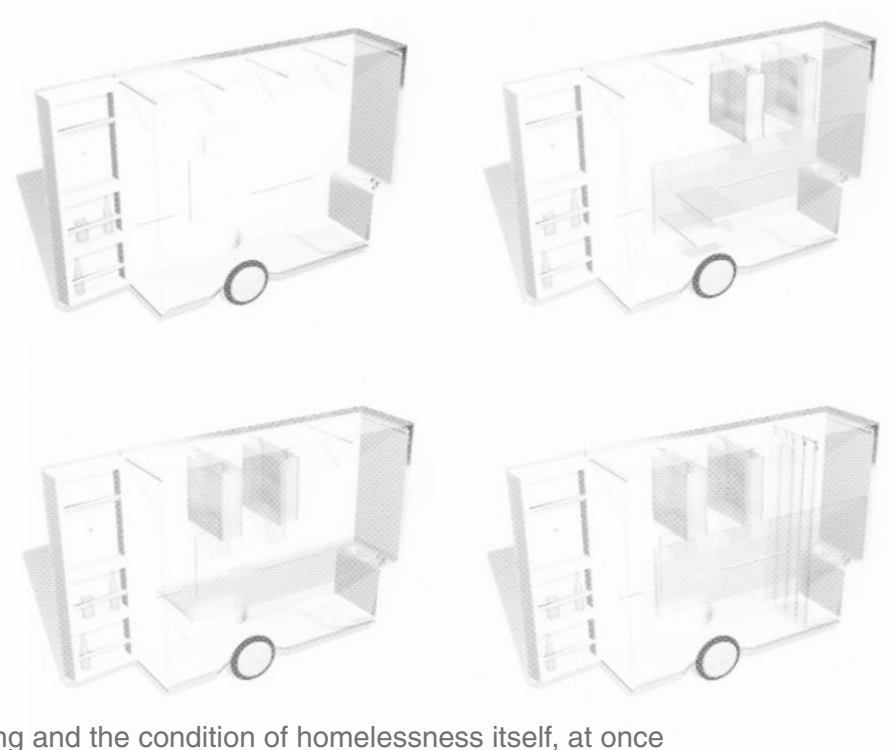
**Basic House** [de Azua, 2000]



Weighing a few ounces, **Basic House** is an individual quest for maximum mobility and freedom.



## Habitat Furtif [R&SIE..., 1998]



A stealth-like mobile living space. Effectively disguises the portable dwelling and the condition of homelessness itself, at once visible and often ignored or rendered invisible.







Concept Driven Design

# Strangely Familiar 3

---

## Multifunctionality

Multifunctional objects that change both shape and use, thereby blurring the traditionally fixed relationship between so-called “form and function.”

## Occasional Table [Ulian, 2002]



Occasional table integrates three discrete furniture typologies – the bench, the storage unit, and the table – in one multifunctional design.

## Rugelah Chair [Boxenbaum, 2000]



“There is a rule in wilderness trekking: One object has to serve at least two functions, or you don’t take it. In design, that’s considered a compromise of both form and function, but I don’t buy it.” (Boxenbaum, 2000)

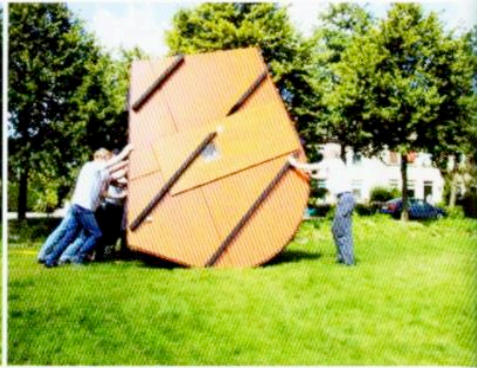


## Tumble House

[Koers, Zeinstra, van Gelderen, 1998]



**Tumble House** can be tumbled onto any of its sides, and each orientation creates a unique interior configuration with an entrance, or door, that in other positions functions as a window, skylight, closet, table or bed.







Concept Driven Design

# Strangely Familiar 4

---

## Transforming the Everyday

Extraordinary designs that reference and transform otherwise ordinary objects and spaces, drawing our attention to everyday conditions.



**Do Break** [Tjepkema & van der Jagt, 2001]



**Do Hit** [van der Poll, 2001]



Reconsideration of the role of the designer and the user?



**Come a Little Bit Closer Bench** [droog, 2001]



**Come a Little Bit Closer Bench** [droog, 2001]



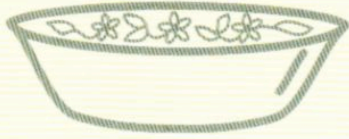
**Do Frame** [droog, 2000]



**Barstool 'Table on Table' & Table-Chair [droog, 1993]**

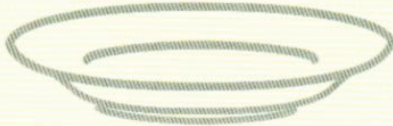


1 bowl with pattern inside  
ø 17cm



+

1 small white plate  
ø 26cm



+

1 vase  
solid colored  
h: 11cm



+

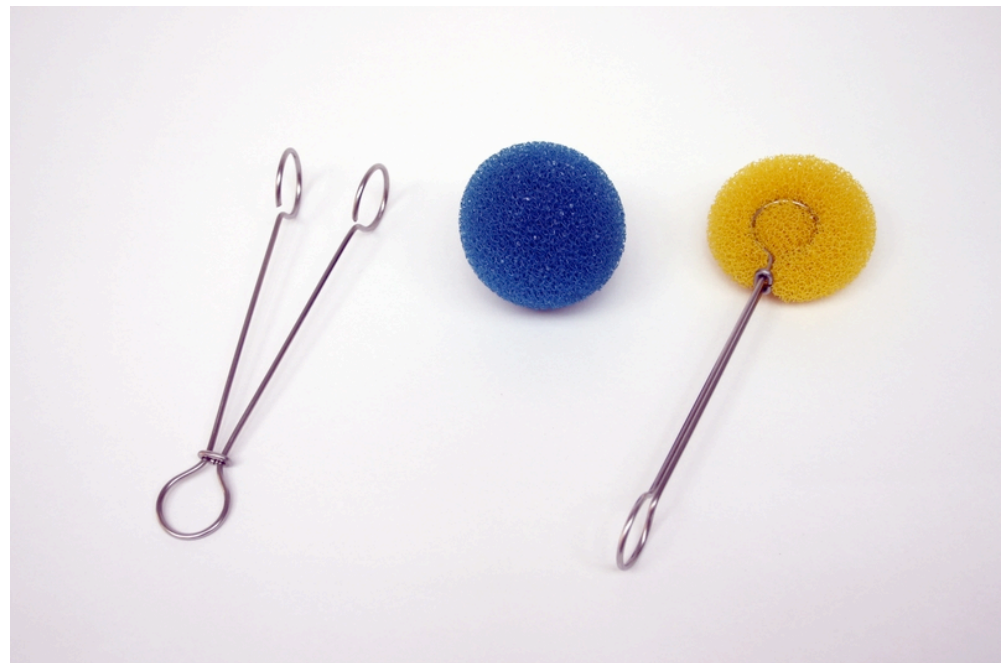
1 American mug  
solid colored (same color as vase)  
h: 7.5cm  
upside down



+

1 white saucer or small plate  
ø 7.5cm  
upside down





**Dish Mop Blue** [droog, 2004]





**Rag Chair** [droog, 1993]



**Tree Trunk Bench** [droog, 1999]







**Private Chair** [droog, 2001]





**Private Rocking Chair** [droog, 2001]



**Shadylace Parasol** [droog, 2004]





**“How to Drink a Fairy Tale”** [d.bros, 2006]







# Designer as Curious George

[Boym & Boym, 2002]



“Curious George is driven by curiosity to play and experiment with elements of his daily environment. He finds new uses for familiar objects, invents different ways of doing things, and tests the limits of materials and objects. Many of his experiments do not work, and he routinely gets in trouble, but occasionally he reaps praise or a medal.”



# Designers as Curious George

---

“Curious George’s life sounds a lot like a designer’s life. After all, the role of the designer today is to be on a continuing lookout, to detect all the intangible waves of emerging needs, trends, and desires, and then, ‘try to give people what they want before they know they want it.’ To reflect on everyday aspects of the our lifestyle and landscape, on familiar things that often pass unnoticed because of their very proximity.”

[Boym & Boym, 2002]

# What do representations represent?

Cargo Cult Design?

---

What do representations represent in designing and prototyping?  
[Holmquist, 2005]

# Cargo Cult Science

---

Looks like science, but it really is not.

Richard Feynman (1974) based the phrase on a concept in anthropology, the cargo cult.

# The Cargo Cult in Melanesia

---

They believe that planes come from paradise. Their ancestors sent them. But the white man, a crafty pirate, manages to get his hands on them by attracting them into a big trap of an airport.



# Cargo Cult Design

---

The designer builds a “fetish” object that has the appearance of a real artifact—but it doesn’t actually do what it claims to do.

Pretends to have solved the underlying problems—and is often successful in fooling others into believing this.

# Forms of Representations

---

**Prototype** represents the knowledge of **function**. A tangible artifact in which the necessary technology to achieve a particular functionality is implemented.

**Mockup** is the embodiment of **form**. How an artifact could manifest itself in the world.

Neither of them are the real thing.

# Design and Technology

---

In the end, good design results from exploiting the technological possibilities and limitations creatively, not from ignoring them. The demand for computer knowledge in a design group using mock-ups is very high.

# Avoiding Cargo Cult Design

---

## Principles (adapted from Feynman and Holmquist)

### Am I fooling myself?

- Do I really have enough knowledge of the technology and potential users to say this will work?

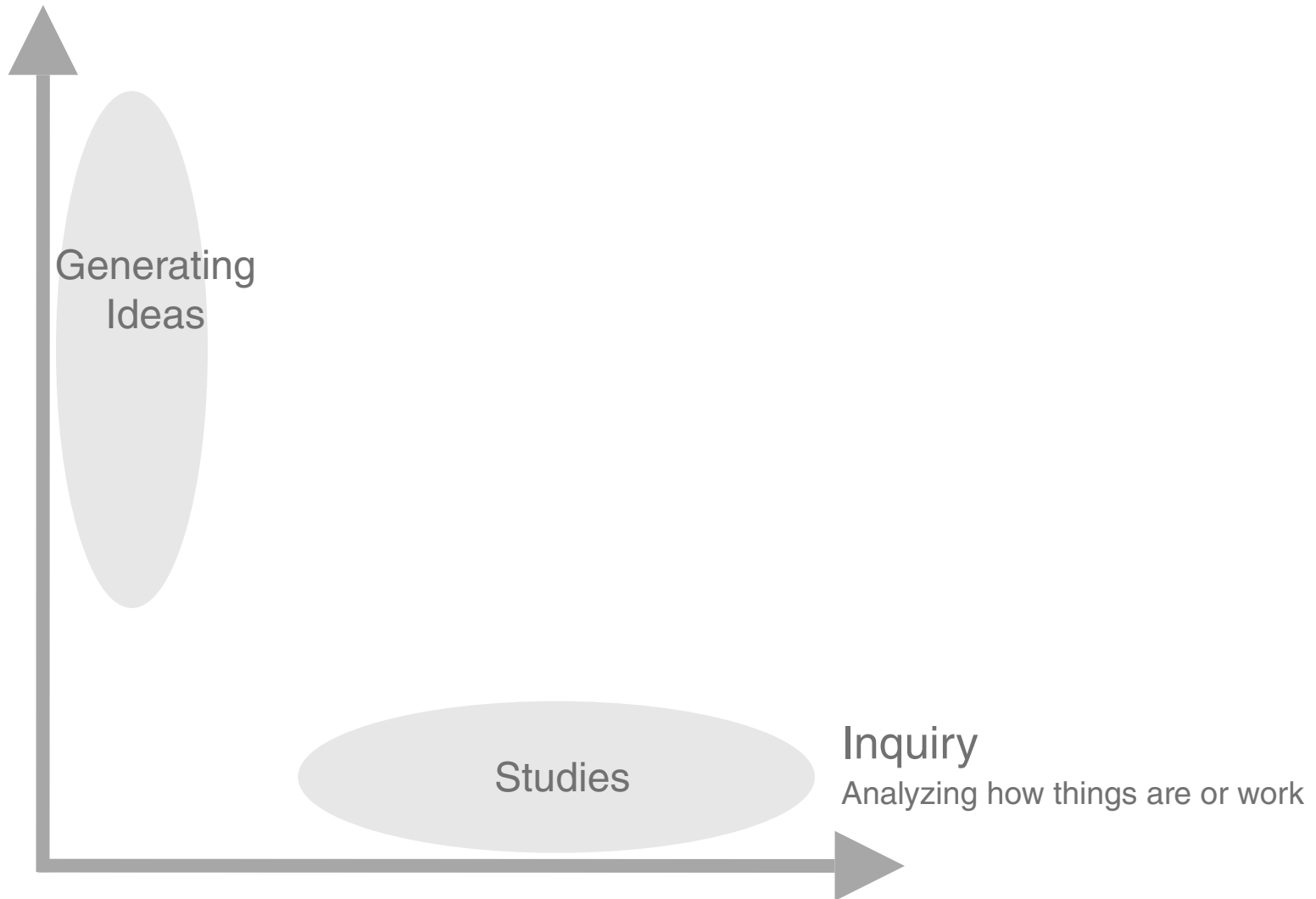
### Am I fooling the layman?

- Is there a risk that people will believe the representation is the real thing?



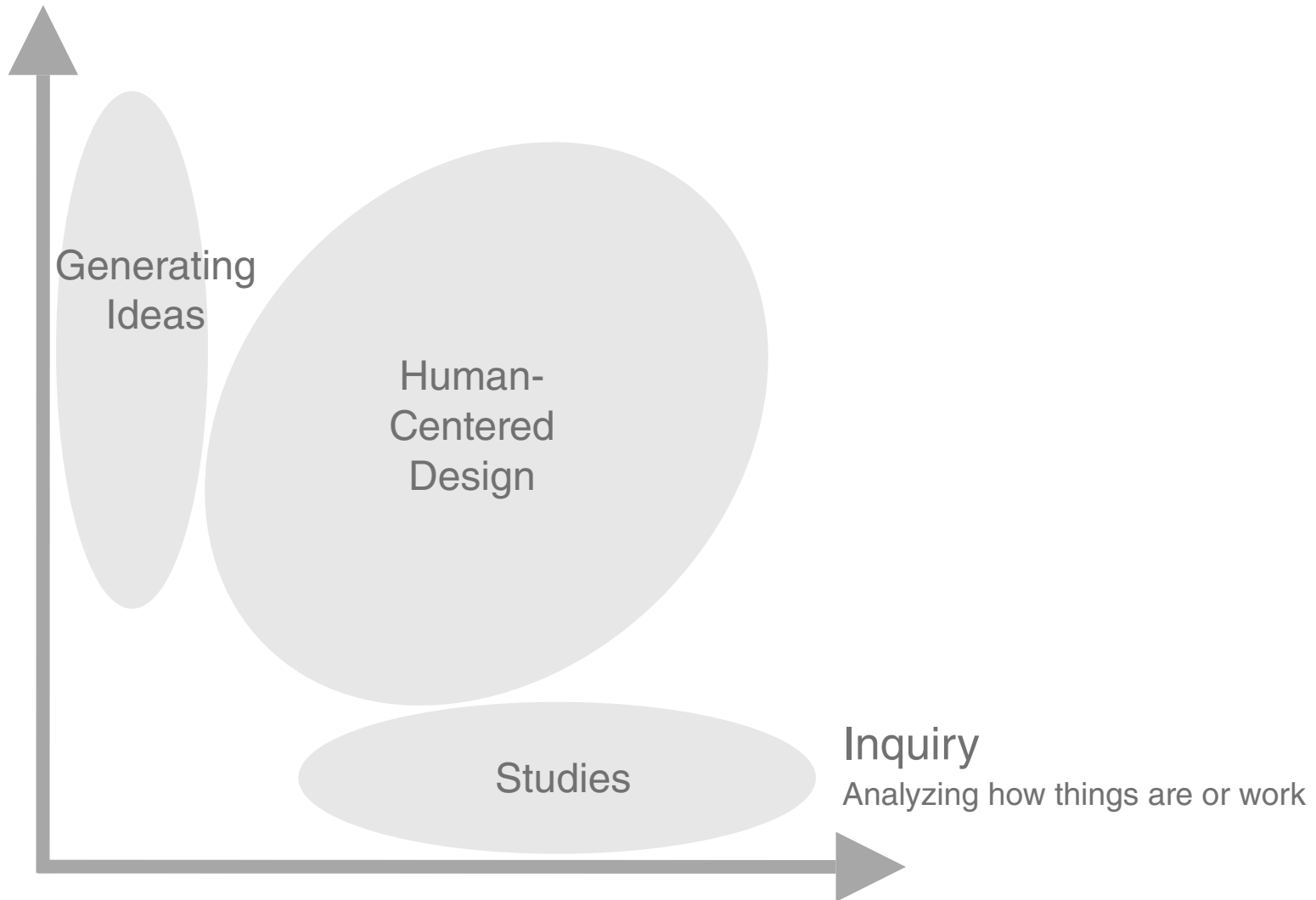
# Invention

Coming up with new and original ideas



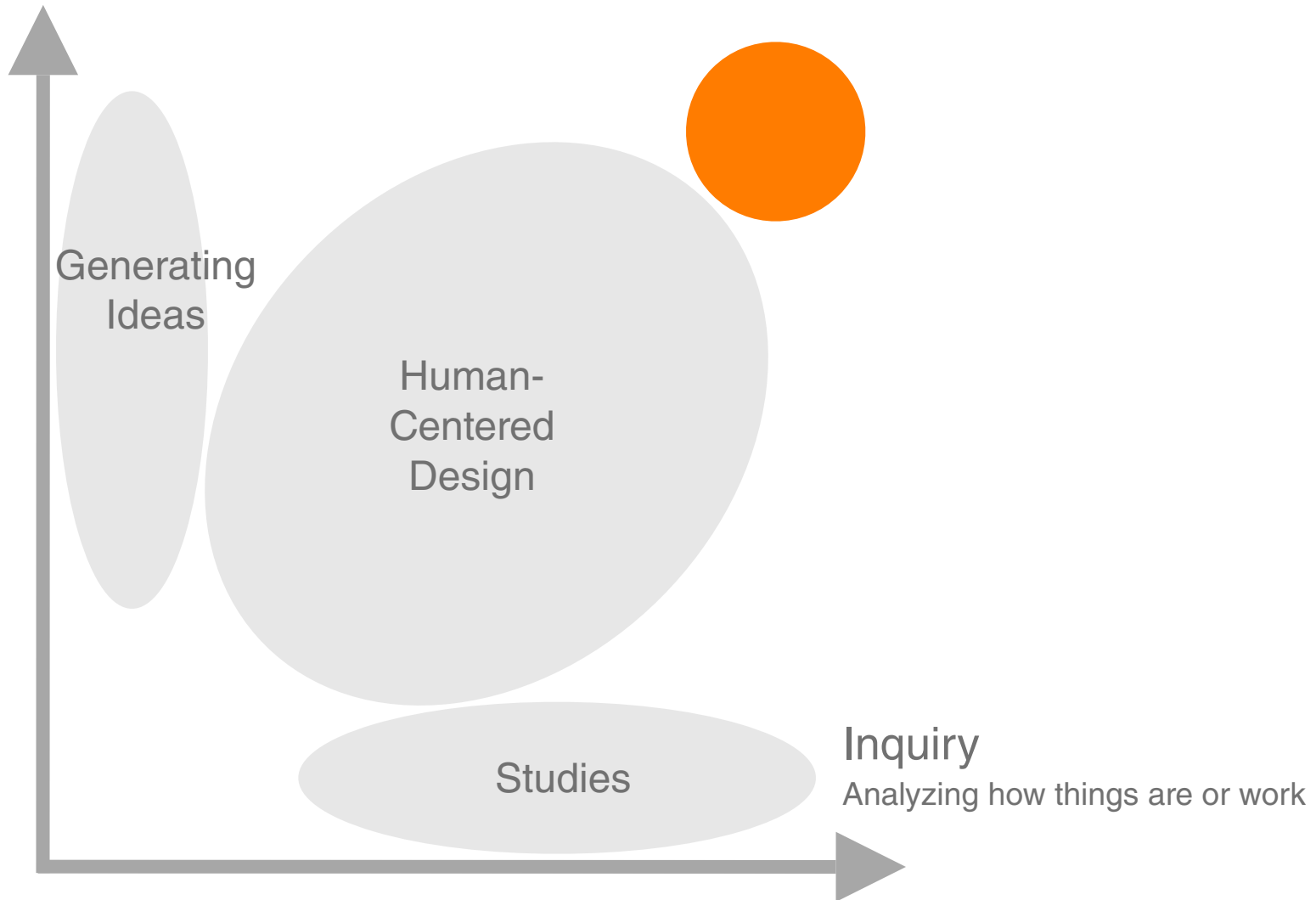
# Invention

Coming up with new and original ideas



# Invention

Coming up with new and original ideas



# Midterm Presentation

---

**Tuesday October 14<sup>th</sup> at 10:30am.** Please be on time.

In-class midterm project presentation. Present your idea using any appropriate tools (slides, movies, mockups, prototypes, etc.).

Presentation time:

7 minutes to present

3 minutes for Q & A

# Thanks!