

# Scenario-Based Design: Analyzing Requirements

CS185 Human Computer  
Interaction (May 15th 2018)

Thanks to Chris North of Virginia Tech for the  
Original Slides.

I'M THINKING YOU SHOULD OFFER  
A FEW CHOICES: MANUAL VS.  
AUTOMATIC AND THE COLOR.

UNACCEPTABLE. THE TECH-  
NOLOGY CAN SUPPORT IT,  
SO WE WILL GIVE CUSTOM-  
ERS THE POWER TO CHOOSE  
EXACTLY WHAT THEY WANT.



OK/Cancel

I THINK THAT MIGHT OVERWHELM  
THEM... UNLESS THEY ARE ALL  
ENGINEERS...

(SIGH)  
ALRIGHT THEN ...

HEY! WE HIRED YOU TO  
BUILD A *USABLE INTER-*  
FACE, NOT *CHANGE OUR*  
REQUIREMENTS.



toothbrush engineers, that is : copyright 2005 tom chi and kevin cheng \_

## CHOOSE YOUR TOOTHBRUSH:



handle color:

bristle color:

grip tackiness:

automatic ☒

manual ☐

(learn the benefits of automatic!)

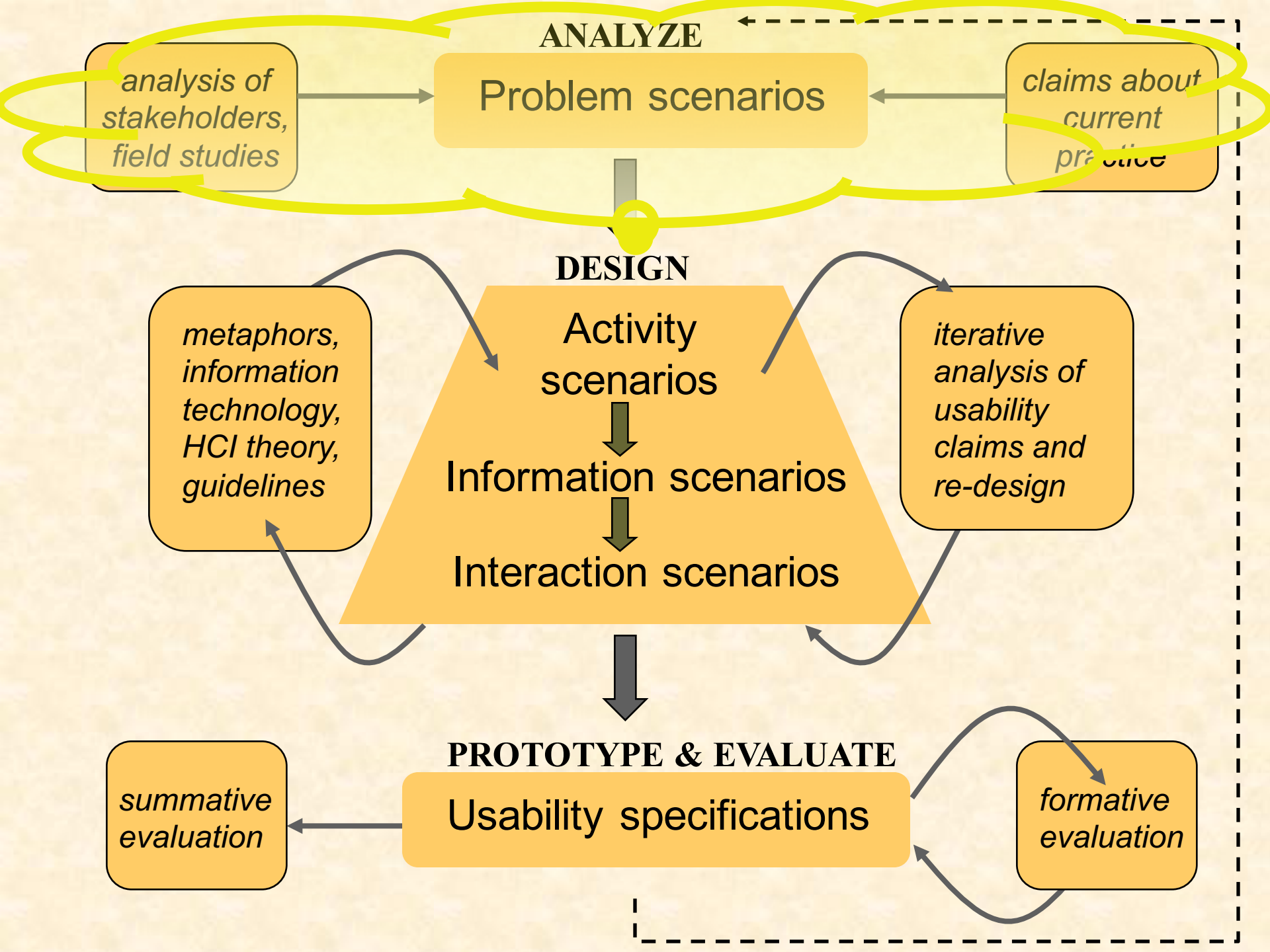
maximum torque:

how many speeds:

handle angle (rad):

number of bristles:

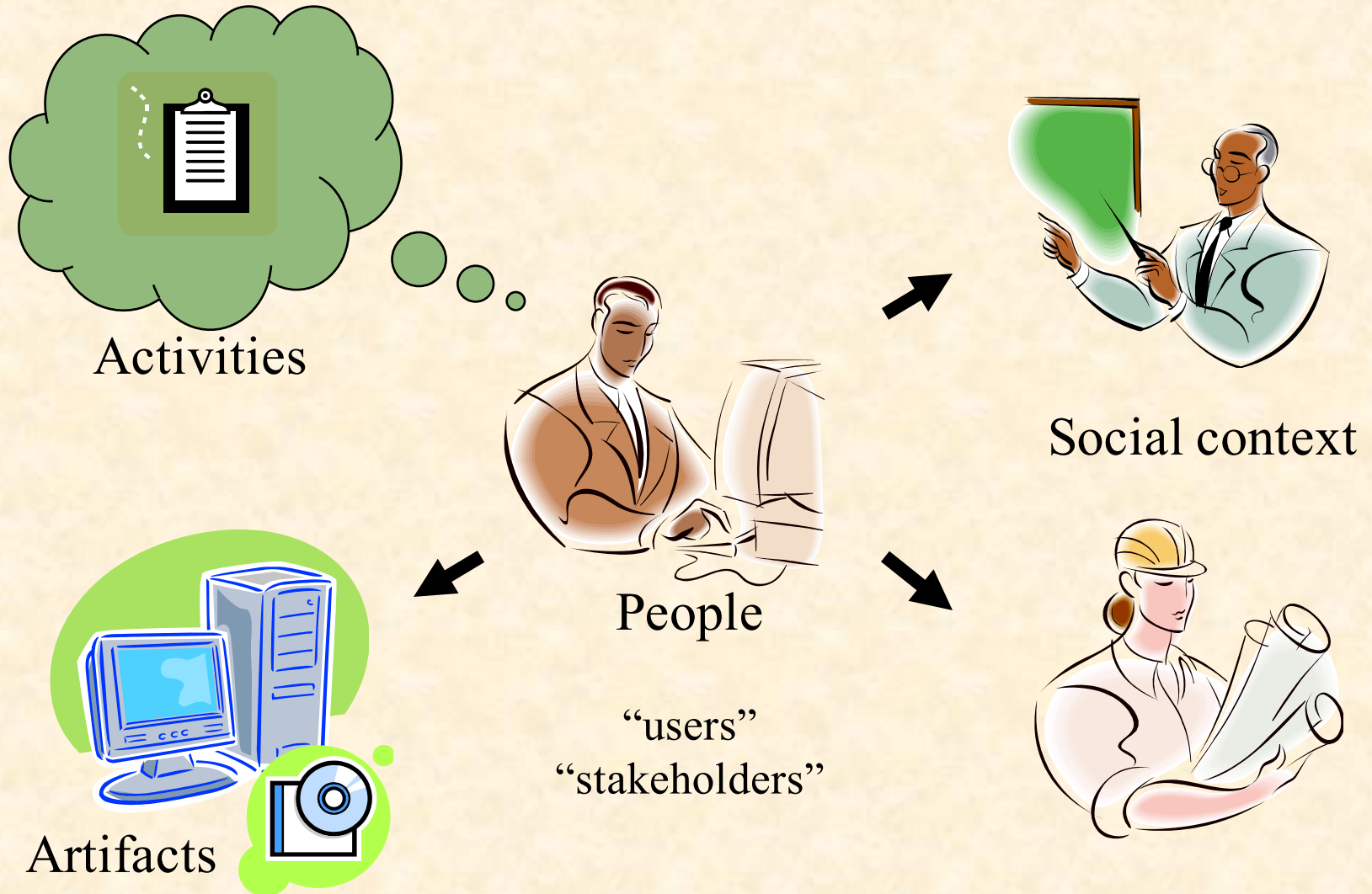
soft	<input type="text" value="0"/>
med	<input type="text" value="0"/>
firm	<input type="text" value="0"/>



# Analyzing Requirements

- *Goal: understand users' current activities well enough to reason about technology-based enhancements*
- To meet real needs, you must identify the (hidden!) problems & desires

# Things to Identify





# SBD and Requirements Analysis

**Root concept:** vision, rationale,  
assumptions, stakeholders



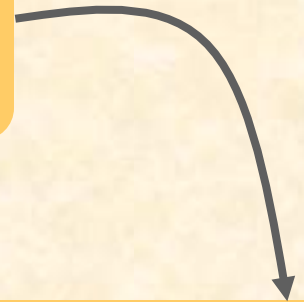
**Field studies:** workplace observations,  
recordings, interviews, artifacts



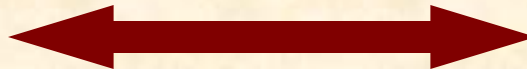
**Summaries:** stakeholder, task, and  
artifact analyses, general themes



**Problem scenarios:**  
illustrate and put into  
context the tasks and  
themes discovered in  
the field studies



**Claims analysis:**  
find and incorporate  
features of practice  
that have key  
implications for use



# Field Studies

- Observation
  - Ethnographic method: watch what they do in **real** world
  - Passive vs Active:
    - Contextual inquiry (ask during)
    - Participatory analysis (ask after, with video...)
- Interviews
  - Structured or informal
  - Explicit vs Tacit knowledge
- Questionnaires
  - Survey (demographics, skills, attitudes, utility, ...)
  - Quantitative, statistical results

	Observation	Interview	Questionnaire
<i>Goal</i>			
<i>Method</i>			
<i># Users</i>			
<i>Tools</i>			
<i>Data</i>			
<i>Depth</i>			
<i>Effort</i>			
<i>E.g.</i>			



# Some suggestions on how to see

- ✓ Leave your categories at home...
  - ✓ Forgetting is seeing things anew.
- ✓ Listen
- ✓ Talk
- ✓ Reflect on what you've seen and heard
  - ✓ Does it make sense?
  - ✓ Can you tell a complete story?

# Representations of Results

- How to represent the problem?
- Scenarios
- User profiles
- Video, pictures, storyboard
- HTA: hierarchical task analysis
- ...

# Example: Grocery Shopping

- Users, artifacts, activities, social context
- Claims
- Problem Scenarios
- HTA



# Usability Case Library

- <http://ucs.ist.psu.edu/>

The screenshot displays the Usability Case Study Tool interface within a Microsoft Internet Explorer browser window. The address bar shows the URL <http://ucs.ist.psu.edu/default.asp?button=2>. The page header features the logo **ucs.ist.psu.edu**.

**Overview**

**Case Studies**

- Garden-com
  - Requirements Analysis
    - Planning
    - Methods & Materials
    - Information Gathering
    - Interpretation
    - Synthesis
  - Activity Design
  - Information Design
  - Interaction Design
  - Documentation
  - Usability Testing
- m-Banking
- PAWS
- PhoneWriter
- PLESS Web Site
- TAPPED IN
- Virtual Science Fair

**study garden-com**

Garden-com > Requirements Analysis > Synthesis

Name	Type	Date
<b>Description</b>		
<b>Problem Scenarios</b>	Problem Scenarios	9/4/2001
Interview transcripts were especially useful in creating a problem scenarios. There are three scenarios, which focus on different types of gardening shoppers (nursery, superstore, catalog) and a nursery retailer.		
<b>Problem Claims</b>	Problem Claims	9/4/2001
Claim features emerged during these analysis (information exchange, shopping preparations, etc.) and in the qualitative analysis of interview and focus group session transcripts. Others were influenced by the knowledge that garden.com would be implemented online.		

**garden-com problem claims**

Type: [Problem Claims](#) Creator: Jennifer Thompson Date: 9/4/2001

**Description**

Claim features emerged during these analysis (information exchange, shopping preparations, etc.) and in the qualitative analysis of interview and focus group session transcripts. Others were influenced by the knowledge that garden.com would be implemented online.

**Artifact**

Situation Feature	Possible Pros (+) or Cons (-) of the Feature	Scenarios
Shopping cart	<ul style="list-style-type: none"><li><input type="checkbox"/> holds and moves items too bulky or heavy to carry</li><li><input type="checkbox"/> affords a browsable display of products selected</li><li><input type="checkbox"/> but may be difficult to maneuver through narrow aisles or around product displays</li><li><input type="checkbox"/> but different carts are similar and may be confused</li><li><input type="checkbox"/> but shopper may forget to pull along when moving</li><li><input type="checkbox"/> but basket may not be sized or shaped correctly</li></ul>	<ul style="list-style-type: none"><li>■ <a href="#">Maddy Banks Orders from a Mail Catalog</a></li><li>■ <a href="#">Susan goes to Kmart</a></li></ul>
Asking new customers to fill out registration form	<ul style="list-style-type: none"><li><input type="checkbox"/> allows nursery to keep track of customers</li><li><input type="checkbox"/> encourages the feeling that the customer's service is of value</li><li><input type="checkbox"/> but may be inappropriate if customer is in a rush or does not intend on returning</li><li><input type="checkbox"/> but may be difficult to maintain if customer information changes</li></ul>	
Creating a garden sketch	<ul style="list-style-type: none"><li><input type="checkbox"/> provides a concrete means of communicating with nursery worker</li></ul>	■ <a href="#">George plants a new rose garden</a>

# Project part 2

- Sample dataset
- Goal: Understand how analysts analyze it
- Users
- Problem scenarios, claims
- Thurs: intell exercise

# Project

- ✓ Part 1, due Thurs: teams & topics
  - Root Concept
- ✓ Part 2, due in 2 weeks: Requirements Analysis
- ✓ Your mission: find out about your users
  - Who are they?
  - What matters to them?
  - What are they trying to **do**?
  - What is unexpected?
  - How do they now get to the information your project will present to them?
  - What is the scenario of their current work practice?
  - Can you imagine alternate scenarios?
- ✓ Start NOW!