

*Maya Cakmak, Matt Kay, Brad Jacobson, King Xia*

# INFORMING DESIGN CONTEXTUAL INQUIRY

human-computer interaction  
CSE 440 WINTER 2015  
JAN 16 - WEEK 2 - THURSDAY



University of  
Washington

# CSE 440 project checklist

Find a problem

...

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Find a problem

...

*what's next?*

“Getting the right design”

# Data gathering/design discovery

**goal:** gathering data to inform design



# Data gathering/design discovery

- Thinking is not doing
- Context has most of the information
- **The user is not you!**



# Data gathering/design discovery

- Thinking is not doing
- Context has most of the information
- **The user is not you!**
  - different experiences
  - different terminology
  - different ways of looking at the world



# Data gathering/design discovery

## **get information from the user**

ask them

observe them

make them observe  
themselves



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*Interviews*

*Questionnaires*



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*Ethnography  
Passive  
observation  
Think-aloud*

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Experience  
sampling  
Diaries/logs

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*Interviews*

*Questionnaires*

# Interviews



*not this*



*not this*



*this!*

- Unstructured
- Semi-Structured
- Structured

**dub**

# Interviews

- Dos:
  - Plan ahead & pilot
  - Start with easy non-threatening questions
  - Be flexible, but know when to direct
  - Be appropriate for the audience (age, jargon, etc.)
- Don'ts:
  - Long or compound questions
  - Leading questions



# Focus groups & group interviews



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- **Focus groups:** one demographic (e.g., mothers)



- **Group interview:** may be multiple related demographics (e.g., all members of family)

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- **Focus groups:** one demographic (e.g., mothers)
- **Group interview:** may be multiple related demographics (e.g., all members of family)
- People to **build on each other's ideas**
- **Moderate** to ensure participation from all

# Questionnaires/Surveys

- Clearly worded questions
- Don't expect the user to write a lot
- Can be online or on paper
  - SurveyMonkey and Google Forms
- Try to find an existing, validated survey
- Tricky with children



# Questionnaires/Surveys

- Specify clear instructions for each question
- Time lengths, often expressed as ranges
- Scales
  - Odd or even items
  - Number of items on the scale
  - Likert: measures opinion (e.g., strongly agree)
  - Semantic differential scale: choose between two extremes (e.g., boring vs. fun)

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*Caveat:*

*Thinking is  
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*Ethnography  
Passive  
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# Ethnography

- Immerse in the culture that you study
- Requires the knowledge and cooperation of the observed
- Collections of notes, comments, transcripts, incidents, sketches, videos, images, and artifacts



# Passive observation



How do children communicate with distant parents?  
Lana Yarosh, Georgia Tech

# Passive observation

- Know what you're looking for
- Field or Lab?
- Take notes, sketches, pictures
- Record video if possible
- Consider taking structured notes

Time	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
0:00					
0:15					
0:30					
0:45					
1:00					
1:15					
1:30					
1:45					

# Think aloud

- Ask the participant to narrate what they are doing and thinking
- Ask two participants to work together on a task, while narrating what they're doing

# Data gathering/design discovery

## **get information from the user**

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*Caveat:*

*“I am being  
watched”*

# Data gathering/design discovery

## **get information from the user**

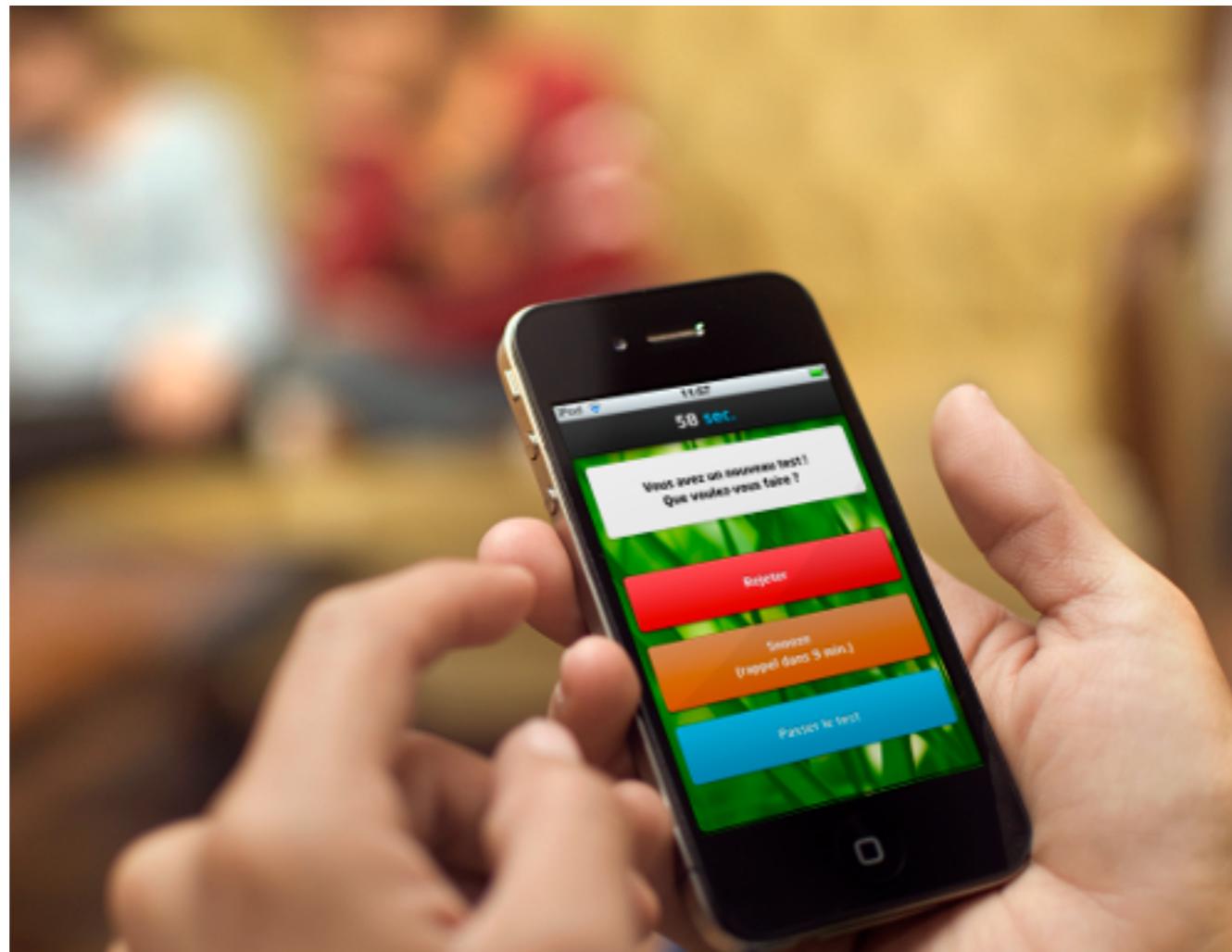
ask them

observe them

make them observe  
themselves

*Experience  
sampling  
Diaries/logs*

# Experience sampling



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# Diaries/logs

<b>When we talked:</b>	<b>How we talked:</b>	<b>What we talked about:</b>
 Morning   Day   Evening	 Phone   Computer  	 About School   About a Trip or Visit   About Art or Music   About Sports   Saying "Goodnight"   Told Jokes or Laughed
<b>How I felt afterwards:</b>		
 Okay   Happy   Sad   Angry  	 About a Book   About a TV Show or Movie   Saying "I Love You"	

**Need**

Mon	Tue	Wed	Thu	Fri	Sat	Sun
12am - 3am	3am - 6am	6am - 9am	9am - 12pm	12pm - 3pm	3pm - 6pm	6pm - 9pm
3am	6am	9am	12pm	3pm	6pm	9pm - 12am

You needed:  Info.  Assist.  Other

What did you need? *to know if Stroller could be used on Don Valley Br Trail*

Why did you need it? *I wanted to take baby forward in trail but it must be ice-free*

Where were you? *at home*

What were you doing? *planning outing*

When did you need it? *5-10 mins*

What I needed was very important.

Strongly Disagree	Disagree	Neutral	<input checked="" type="radio"/> Agree	Strongly Agree
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### *Contextual inquiry*

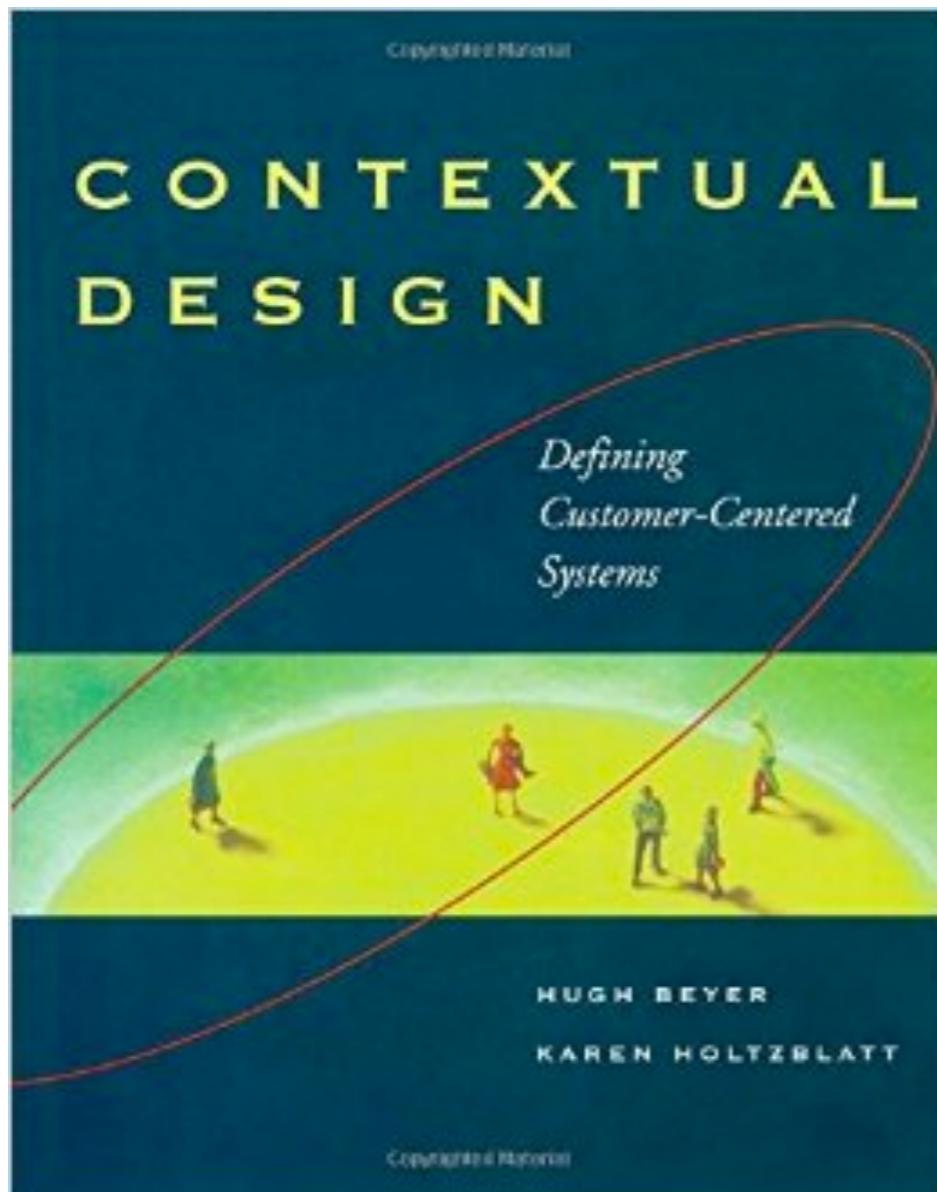
go where the user performs the task

observe the user perform the task

talk to the user **in context**



# Contextual inquiry



“Do that and you can’t help but gain a better understanding of your customer.”

# Contextual inquiry

- Context
- Partnership
- Interpretation
- Focus

# Context

- Go to the workplace & see the work as it unfolds
  - people summarize, we want details
  - people abstract, we want concrete

**watch out:** “generally”, “usually”, “in our company”, “In our group we do ..” (present tense)

# Partnership

- In a master/apprentice relationship
  - The master is doing stuff
  - The master explains what they're doing
  - The apprentice asks clarification questions
  - The master answers
- Avoid these relationships
  - Interviewee/interviewer
  - Expert/novice(design)
  - Guest/host



# Interpretation

- Facts are only the starting point, design based on interpretation
- Share interpretations to check your reasoning
  - Yes will be a clear yes
  - No might be subtle (“Huh?”, “Umm...”, “Yes, but...”)

# Focus

- “steer” conversation to stay on useful topics
  - respect triggers (flags to change focus)
- surprises
  - don’t ignore them
- nods
  - instead, take the attitude that everything is new
- ignorance
  - admit it



commit to challenging your assumptions,  
not validating them



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commit to challenging your assumptions,  
not validating them

*be like aliens  
observing earth*



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# CI Process

- Conventional interview, small talk, break the ice
  - Let them know your goals
  - Get to know them
- The transition
  - Tell them the new rules
- Contextual interview proper
  - Observe-interpret-probe in a loop
- Feed back comprehensive interpretation



# How to screw it up

- Slipping into abstraction
  - Keep it concrete, in the work, in the details
- Not being inquisitive or nosy enough
  - If you have the impulse to ask, do it right away
- Overly disrupting the task
  - Questions are great, but do not ask so many so fast that the participant stops doing their task
- Turning it into a regular interview
  - Did you really leverage the context? Coffee shop vs. context, any difference?



# Design ideas

- Should you tell the user during contextual inquiry?

**YES:** What better place to get feedback?

**NO:** Do not bias their thinking

# Advise from Matt/King/Brad

- Concreteness:
  - Can you please show me?
  - Can you walk me through the last time you did it?
- Pen-paper versus laptop
  - Laptop: they can't tell what you're doing, less personal
- Recording: useful
- How many people should do the CI: **2**

# Assignment 2

- Getting the design right
- From the CI:
  - Common themes, problems, and practices
  - Tasks, personas, scenarios, initial designs

# Assignment 2b

- Who are your users?
- Who are your participants, how will you recruit them?
- Where will you observe their current practices?

# Assignment 2c

- Who was your first participant?
- Where did you conduct the CI?
- What did you learn?
- What tasks, problems, or opportunities did you uncover?
- Difficulties?
- What to do differently with the other participants?

*get started now!*

