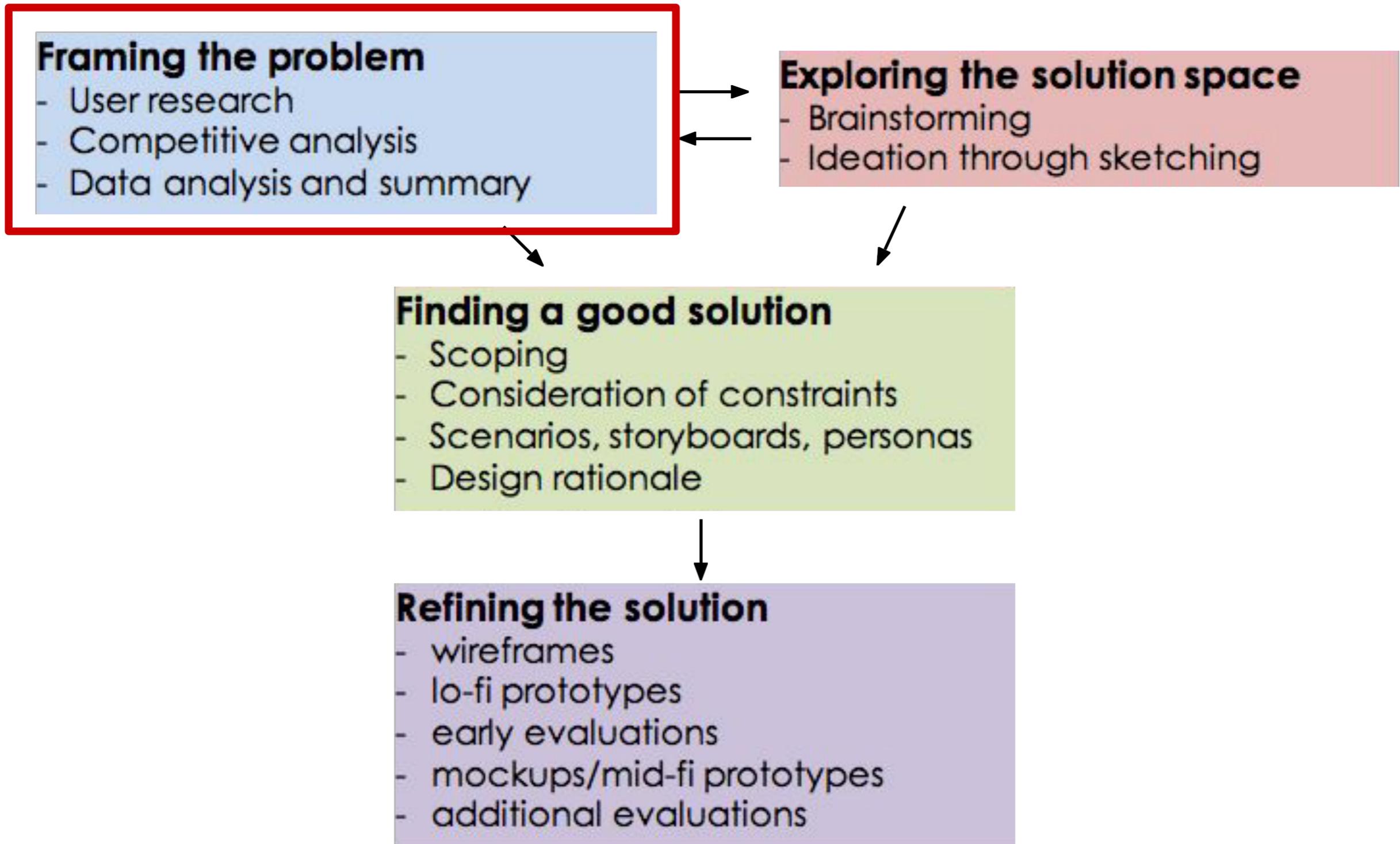


CS 321: Introduction to HCI

Methods for Design, Prototyping and Evaluating User Interaction

Lecture 08:
User Research

Eren Gultepe



Why User Research?

What users WANT?

What users NEED?

Can a certain "thing" be USED as intended?

Project Checklist

Have you defined what problem you want to tackle?

- *Yes in Assignment 1*

What's next

Let's talk about learning from the user!

“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!**
 - different experiences
 - different terminology
 - different ways of looking at the world

Six things to remember when doing User Research

1.



Cast aside your biases, listen and observe

Let subjects tell their own story, and listen for the things that elicit emotion, cause them concern or frustration.

"If you want to find out what people really need, you have to forget about your problems and worry about their lives."

Six things to remember when doing User Research

2.



Note the contradictions between what people say and what they do

Opportunities for innovation lie within the disconnect between action and words.

Six things to remember when doing User Research

3.



Listen to people's personal stories

Let them relate their successes and failures.

Stories encompass the implicit rules that govern and organize people's lives and reveal what they find normal, acceptable and true. They reveal moral codes, sources of pride, shames, shoulds and should-nots.

Six things to remember when doing User Research

4.



Watch for "work arounds"

People make do and work around the shortcomings of products and situations.

In everyday life, we all come up with "work arounds," clumsy or clever, that we usually are totally unaware of.

You must take note.

Six things to remember when doing User Research



Six things to remember when doing User Research



Six things to remember when doing User Research

5.



Distinguish between needs and solutions.

Needs open up possibilities, solutions constrain them.

If you start with a solution then you may overlook the possibility of coming up with an entirely new and revolutionary product or service.

Six things to remember when doing User Research

6.



Look beyond the obvious.

Your research may seem so routine and familiar that you feel there is nothing new to be learned.

Boredom and frustration easily set in. Stay alert.

The epiphanies and insights emerge from the nuances.

One more thing:



User Research Methods

A/B TESTING
 ACCESS
 AFFINITY DIAGRAMMING
 ANCHOR ANALYSIS
 AUTOMATED REMOTE RESEARCH
 BEHAVIORAL MAPPING
 BODYPORTRAIT
 BRANSTORM GRAPHIC ORGANIZERS
 BUSINESS BRIFING
 CARD SORTING
 CASE STUDIES
 COGNITIVE MAPS
 COGNITIVE WALKTHROUGH
 COLLABORATION
 COMPETITIVE TESTING
 CONCEPT MAPPING
 CONTENT ANALYSIS
 CONTENT INVENTORY & AUDIT
 CONTEXTUAL DESIGN
 CONTEXTUAL INQUIRY
 CREATING TOOLS
 CRITICAL INCIDENT TECHNIQUE
 CROWDSOURCING
 CULTURAL PROBES
 CUSTOMER EXPERIENCE AUDIT
 DESIGN CHARTERS
 DESIGN ETHNOGRAPHY
 DESIGN WORKSHOPS
 DEVIATION TESTING
 DIARY STUDIES
 DIVERSE STORYTELLING
 E-LITE METHOD
 ECONOMIC ANALYSIS
 EVALUATIVE RESEARCH
 EVIDENCE-BASED DESIGN
 EXPERIENCE PROTOTYPING
 EXPERIENCE SAMPLING METHOD
 EXPERIMENTS
 EXPLORATORY RESEARCH
 EYE TRACKING
 FLEXIBLE MODELING
 FLY-ON-THE-WALL OBSERVATION
 FOCUS GROUPS
 GENERATIVE RESEARCH
 GRAFTING WALLS
 HEURISTIC EVALUATION
 MAZE BOARDS
 INTERVIEWS
 KJ TECHNIQUE
 KANO ANALYSIS
 KEY PERFORMANCE INDICATORS
 LADDERS
 LITERATURE REVIEWS
 THE LOVE LETTER & THE BREAKUP LETTER
 MENTAL MODEL DIAGRAMS
 MIND MAPPING
 OBSERVATION
 PARALLEL PROTOTYPING
 PARTICIPANT OBSERVATION
 PARTICIPATORY ACTION RESEARCH
 PARTICIPATORY DESIGN
 PERSONAL HISTORIES
 PERSONAS
 PHOTO STUDIES
 PICTURE CARDS
 PROTOTYPING
 QUESTIONNAIRES

Universal Methods of Design

Bella Martin
Bruce Hanington



100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions.

ROCKPORT

Roles

Two main roles that researchers and participants can take in user research:

Observational

Self-reporting

Roles

Two main roles that researchers and participants can take in user research:

Observational

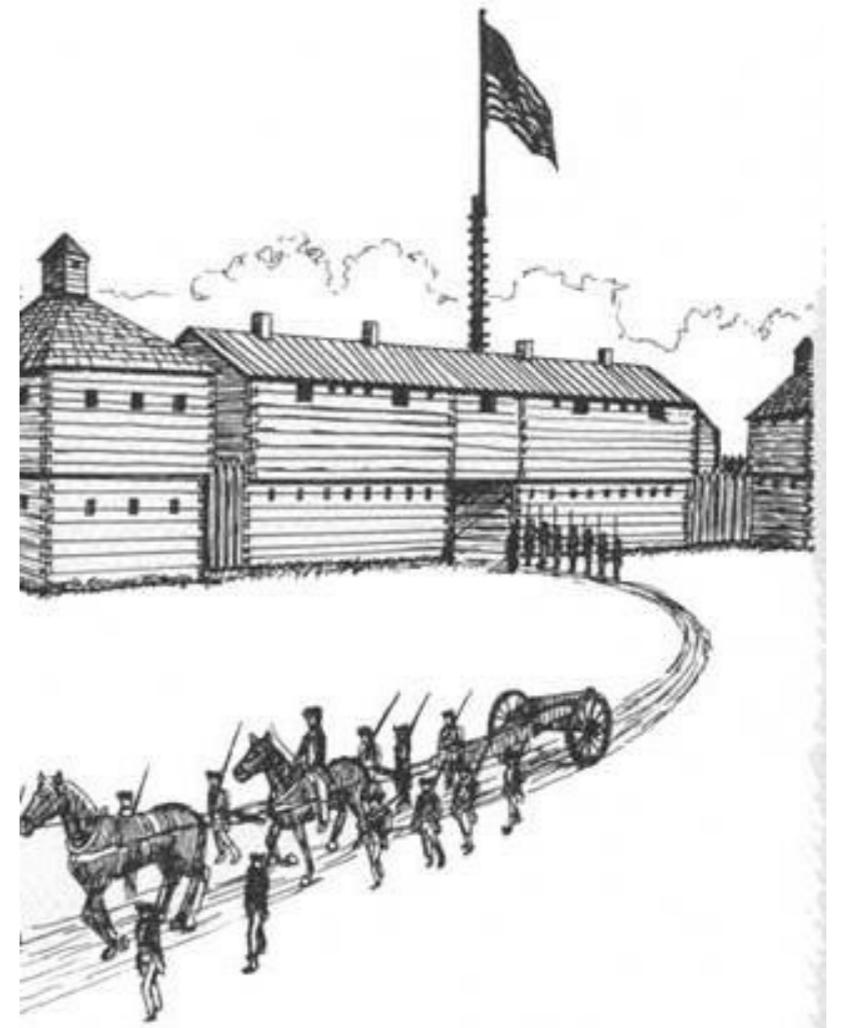
Self-reporting

Ethnography

Emerged in 1920s as a new anthropology method, exploring why groups think and act as they do

Learn local language, record myths, customs, and ceremonies in much greater detail than prior work

You will likely never perform an ethnography



Ethnography

Traditional science attempts to understand a group or individual objectively

Understand the subject of study from the outside in a way that can be explained to “anyone”

Ethnography attempts to understand a group or individual phenomenologically

Understand the subject of study as the subject of study understands itself

Design Ethnography

Goal

To gain a comprehensive and empathetic understanding of the users

Quicker than traditional ethnography

Days, weeks, or months, not years

Can change people's behavior if you are interacting with them

Choose between becoming a “marginal participant” and a “full participant”

Sometimes “concurrent ethnography”

The ethnography is being done while **design is under way**

Participant Observation

Goal

To uncover discrepancies between how participants use a space and how it was intended to be used

Same intent as Design Ethnography

Participant Observation is a form of Design Ethnography

Involves active participation in activities

When

Use when you want to study a specific space/environment (e.g., to plan improvements such as how technology could support interactions)

Fly-on-the-Wall Observation

Goal

To gain a deep understanding of how people behave in a specific location

When

Use when you want to study people unobtrusively (to avoid bias) and you don't require to keep this knowledge on a map

How

Go to a location and observe what is happening there without interacting or talking to people. Be a fly on the wall!

Behavioral Mapping

Goal

To uncover discrepancies between how participants use a space and how it was intended to be used

When

Study a specific space/environment (e.g., to plan improvements such as how technology could support interactions)

Behavioral Mapping

How

Unobtrusive (done “at a distance”)

Start with a site plan or map and a list of behaviors that you want to record, then note when specific behaviors happen in specific locations on the map



Roles

Two main roles that researchers and participants can take in user research:

Observational

Self-reporting

Interviews

Goal

To collect first hand **personal accounts** of experiences, opinions, attitudes, and perceptions

When

Use when you want to **maximize the amount of information** you can get per time spent, you are likely to have follow-up questions, and if context and time are less important

How

Write an **interview script** and meet with participants to ask these questions (even record)

Semi-structured interviews often make sense to allow for more flexibility

Interviews

Why not

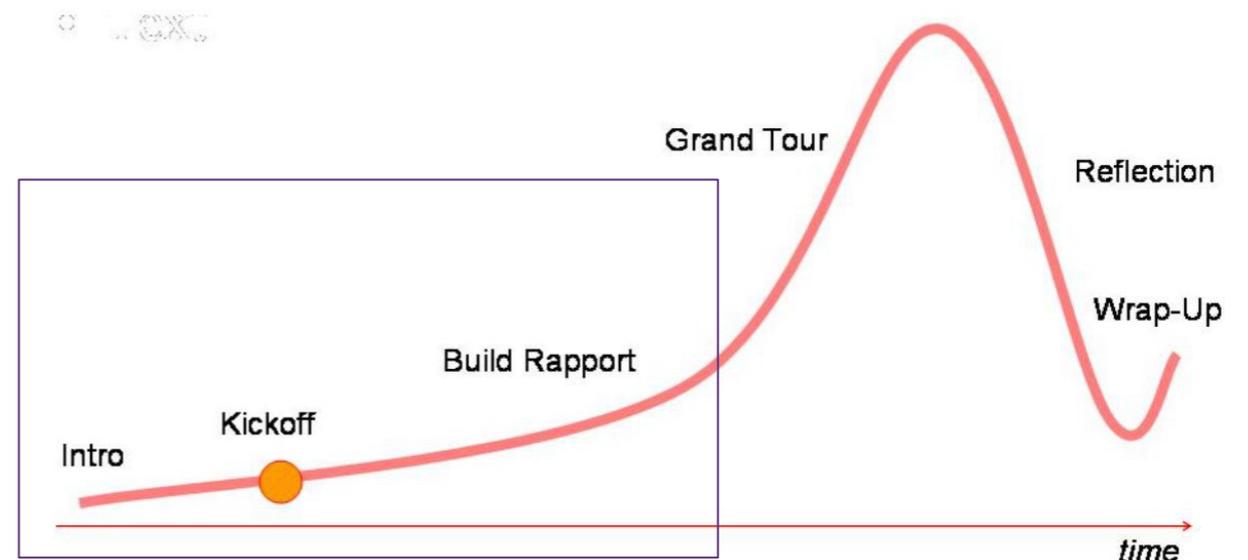
- People are bad at remembering specific details of events
- People remember almost nothing about routine events (a specific time you checked Facebook or sent an email)
- People are terrible at estimating frequency (how often do you use snapchat?)

Interviews

Intro: “Hi, I’m a SIUE student studying coffee. I’m interested in hearing about your experience with coffee. There are no right or wrong answers, I just want to hear what you have to say.”

Kick-off: “Do you drink coffee?”

Build rapport: “Did you have a coffee today? How was it? Do you have a favorite coffee?”

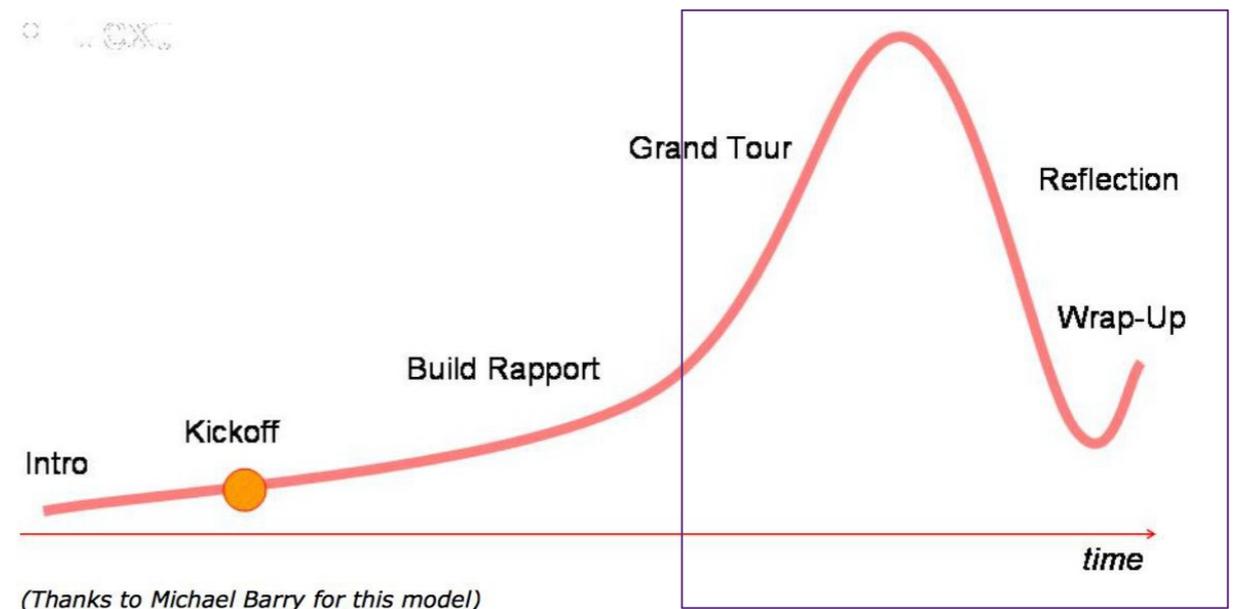


(Thanks to Michael Barry for this model)

Interviews

Grand Tour: “Can you describe your most memorable coffee experience? Why was it so unique? What happened?”

Reflection: “If you were designing the ultimate coffee shop based on your ideal experience...”



Focus Groups

Goal

To gain insights into themes, patterns, and trends that are likely to come out more in a **group setting**.

When

Use when you want to learn about the opinions, feelings, and attitudes from a group about a specific product, service, brand, location...

How

Write an interview script (i.e., a number of questions) and meet with participants in a small group to ask these questions

Be flexible enough to allow the group to carry the conversation elsewhere

Diary Studies

Goal

To capture **specific details of interactions** and when they happened
Capture specific context of interaction (photo diaries, screenshots)
Better understand frequency of use of a feature/app

When

Learn about specific activities over an **extended period of time** (e.g., when it is impossible to observe users throughout that time period)
Doesn't matter that participants are aware of what you're interested in
Less frequent activities can take months to document!

How

Ask participants to note down specific activities

Cultural Probes

Goal

To inspire new forms of **self-understanding** and communication about participants' lives, environments, thoughts, and interactions

When

You want to uncover genuinely new ideas that will benefit the group
Ex.: Study bullying in a classroom and enable children to express themselves in their own ways.

How

Provide participants with kits made up of a variety of items and tasks (e.g., disposable camera, maps, stickers, notebooks)

Graffiti Wall

Goal

To collect participants' responses and thoughts on an environment or system, directly in the context of use

When

Collect information from people where interviews or observation might be unsuitable

Ex.: to study people's thoughts about the elevator at the light rail station without biasing them with the presence of a researcher

How

Provide an open canvas on which participants can freely write or draw

Directed Storytelling

Goal

To collect rich stories of people's experiences

When

Collect stories from participants when time or other factors prevent direct observation or longer forms of research inquiry

Good when you wouldn't be able to come up with questions for an interview because more knowledge is needed

How

Similar to interviews, but focused on stories. E.g., "Tell me a story about the last time you..."

Surveys

Goal

To collect large amounts of self-reported information from people

Ex.: to understand how common a specific behavior is

When

Get as many perspectives rapidly and/or **quantify and statistically test** insights when you have a good understanding of questions and answers

Less flexible than interviews: **requires more knowledge** about the population, no chance to ask follow-ups

Can complement interviews to understand broader patterns

How

Develop and sequence questions, test the survey, recruit participants

Roles

Two main roles that researchers and participants can take in user research:

Observational

Self-reporting

Contextual Inquiry

Applied design ethnography

“The core premise of Contextual Inquiry is very simple: go where the customer works, **observe the customer as he or she works**, and talk to the customer about the work. Do that, and you can’t help but gain a better understanding of your customer.”

Contextual Inquiry

Goal

- To study actual behavior in **real contexts** of use and see how context impacts interactions.
- The goal is to learn **how the participant does** the task in order to learn how to support it
 - NOT to learn to do the task

When

Use when you are not worried about biases (that your behavior will change behavior somewhat) and you are interested in specific tasks

Contextual Inquiry

How

- Define **your tasks up front** (ask participants in advance about the types of things that they do and the places where they do them to help design your session).
- Conduct the session in the place and time that the task is normally conducted.
- Enlist the participant's active assistance in understanding the task, but minimize interruptions.

Eg.: Get a taxi ride and observe and ask open questions about the task
Probably used a lot when developing Apps like Uber! =P

Principles of Contextual Inquiry

Context

Must be done in the setting of the participant.

Partnership

Master/apprentice model; investigator is humble.

Interpretation

Observed facts must be regarded for their design implications. Raw facts without interpretation are not very useful.

Focus

Themes that emerge during the inquiry. You cannot pay attention to all facets of someone's work at all times.

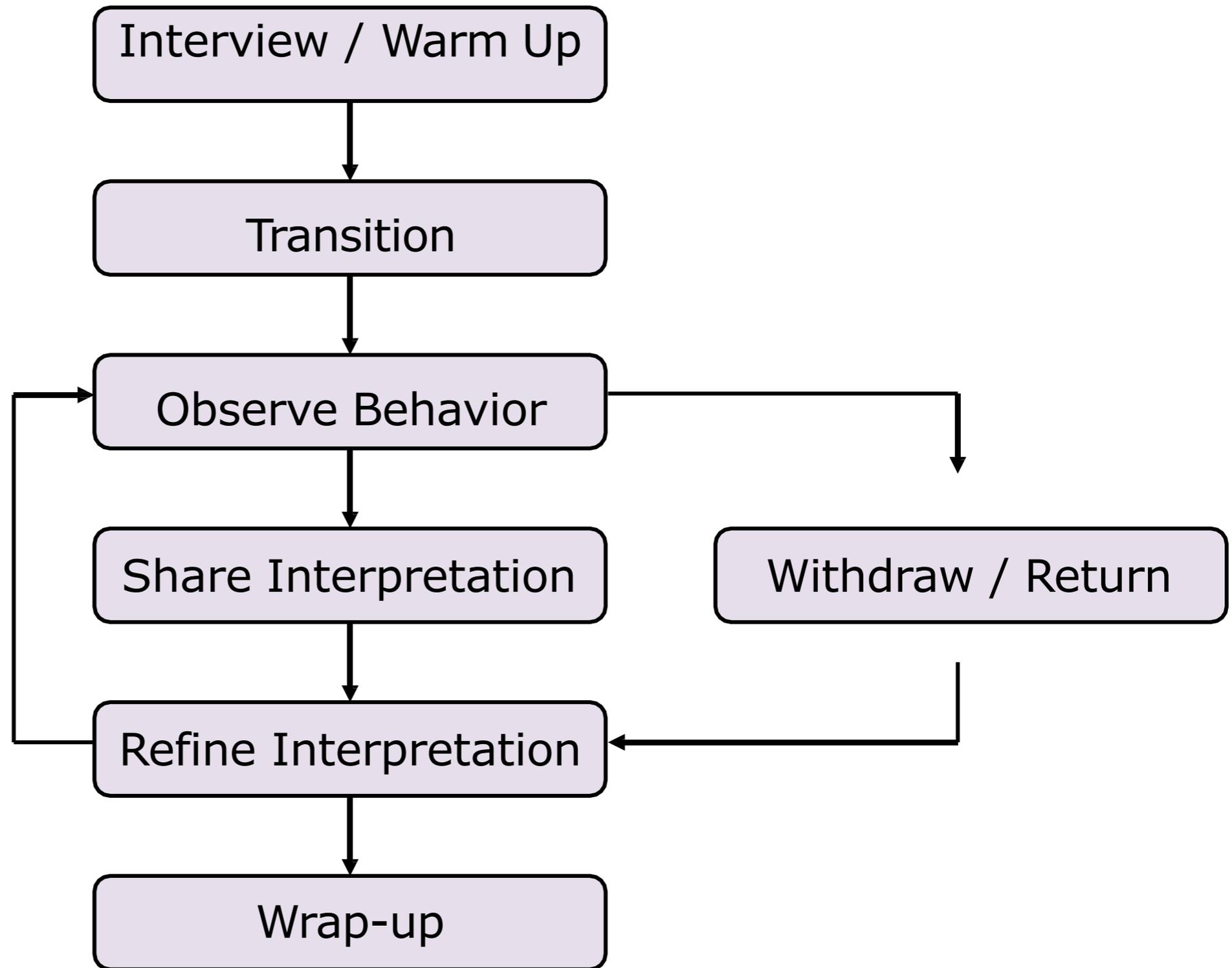
CI Process (the how)

- 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:
 - Observe-interpret-probe in a loop
- Feed back comprehensive interpretation
- Recording: useful
- How many people should do the CI: typically 2

How to mishandle the CI

- 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?

The Stages of a Contextual Inquiry



Context

Go to the workplace & see the work as it unfolds

People summarize, but we want details

Keep it concrete when people start to abstract

“Do you have one? May I see it?”



Contextual Inquiry Overviews

[Contextual Enquiry: Overview Sketch](#)

[Contextual Inquiry: Leave Your Office to Find Design Ideas](#)

Personal Inventories

Goal

To understand the relationship between the product and users from the participant's point of view

When

Use when you want to explore the relationship between user and a specific artifact/product

How

Prepare questions that you may ask when the participant talks about the things they own

Ask participants to walk through their inventories

Ask specific questions to find out their relationship/emotions

Which methods are ideal for your project?

In-class activity

In your group go through the handout and answer all questions.

You can use this [user research cheat sheet](#) to remind yourself of the different user research methods that might be suitable for your project.

Questions