Introduction to HCI
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Field Studies
Observation

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Logistics

▶ Assignment 1 due midnight tonight

▶ Assignment 2 will be out on Thursday

▶ Team formation due on Thursday

▶ Grading

▶ Course website updated

Learning goals

- Understand field studies and explain why field work is an appropriate choice of enquiry method

- Explain when and how to use field methods

- Identify focal points for doing a field study

- Explain observation as a fundamental method

- Describe how to conduct an observation session, what to observe, and how to collect and document data

- Discuss pros/cons of observation

What is a field study?

- Field study is a general term that denotes a study that takes place in context

  - A general method for collecting data about users, user needs, and product requirements that involves observation and interviewing

- Value of context?

  - What people say and what they do can vary significantly

Field study methods

- Ethnography (not covered in this course)
- Observational study
- Interview study
- Contextual inquiry (not covered in this course)
- Diary study (not covered in this course)
- Field experiment (not covered in this course)

Why do we observe people?

▶ To understand their issues and needs

▶ To find out existing problems

▶ To build empathy

▶ To capture tacit knowledge and ward against participants trying to please observer

Pros of observation

- Comprehensive understanding of current practice
- Greater ability to predict the impact of a new or re-designed technology
- Give developers a richer understanding of who and what context they are developing for
- Greater ability to prioritize design ideas & features

Cons of observation

- Time intensive
- Vast amounts of data that can be difficult to analyze
- Could perpetuate negative aspects of current design
- Output is description of practices, not prediction for design
- Scale – small number of users

Specifics on observation

▸ Look for what people do, not what they say

▸ Direct observations

  ▸ Researcher on site, in context

  ▸ Participate as little as possible

  ▸ Take notes, audio tape conversational components, collect artifacts, take pictures of artifacts that cannot be taken, sometimes videotape as a backup

▸ Video observations

  ▸ Researcher not present, video camera capturing instead

  ▸ Can be less intrusive for participant

What to observe?

▶ ROUTINES + PATTERNS

▶ Language

   ▶ What they say and how they say things (do, think, believe)

▶ Actions and activities

   ▶ What they do

   ▶ How they behave

▶ Things and environments

   ▶ What artifacts? spaces?

   ▶ How are these artifacts and spaces: shaped and used

General steps for observational studies

- Determine objectives
- Develop focal points
- Identify participants and sampling strategy, recruit participants
- Determine data collection methods and design materials
  - e.g., creating interview questions
- Data analysis
- Other pragmatics
  - How will data be recorded?
  - What do you need to bring?
  - Ethics
  - Piloting
- Post-session debriefing

1. Objectives

- Formulate objectives:
  - State what you want to achieve
  - Use objectives to set initial scope
    - e.g., to understand how doctors manage patient records and the implications this activity has for the design of electronic health records

2. Identify focal points

▶ 2-5 questions that focus and scope the project:
  ▶ Driven by objectives or development goals
  ▶ Answers not anticipated or assumed
    ▶ e.g., what are the triggers that result in a doctor updating (or referencing) a patient record?

3. Recruiting participants

▶ Can be more involved than for lab studies:
  ▶ Participants allowing you into their "space"
  ▶ Often involves more time than a lab study
  ▶ Consider appropriate incentive (lab study norms not necessarily appropriate: e.g.,15-20 $/hr)

▶ Usually far fewer participants than in a lab study, 3-12 is common

3. Identifying participants

- Subcultures
  - Social groups defined by cultural similarities (e.g. Punk Rocker, Harley drivers, …)
  - Share norms: clothes, behaviors, activities, language, place (e.g. Italians, …)
- Practices
  - Social practices: cooking, skateboarders, DIY makers
    - Materials (e.g. things, computers, artifacts, environment…)
    - Competences (e.g. skills, knowledge, technology)
    - Motivations

3. Gaining access

▶ Entry: the process of developing presence and relationship in the designated research setting that makes it possible for the researchers to collect data.

▶ Field: the natural, non laboratory setting or location where the activities which a researcher is interested take place.

▶ Building rapport: develop good personal relationship with people to get access and information.

4. Data collection methods

▶ Select methods that will address focal points and that will be appropriate for chosen site, e.g.,

  ▶ Observation

  ▶ Interviews

  ▶ Self-report techniques

    ▶ Diaries and visual stories

  ▶ Remote data collection techniques

  ▶ Artifact analysis

4. Data collection techniques

▸ Notes (e.g. bullet point, what people say)

▸ Camera

▸ Audio

▸ Video

▸ Tracking users (e.g. diaries)

▸ Interaction logs

▸ Screen capture

Field notes

▶ No point in observation if you don't record.

▶ Develop powers of observation, practice mental notes.

▶ Describe behaviorally: try to avoid interpreting meaning of action.

▶ Description of individual (in detail).

▶ Describe physical state of environment (in detail).

▶ Keep your interpretation separate from notes.

Type of data

- Qualitative data
  - Interpreted to tell a "story", categorization and looking for themes

- Quantitative data
 - Presented as values, tables, charts and graphs; often treated statistically

5. Data analysis

▶ Circulate notes and transcriptions among team

▶ Hold video analysis sessions

▶ Identify patterns: in behavior, events, artifacts, within and across individuals

▶ Common techniques:
  ▶ Coding data
  ▶ Affinity diagrams

▶ Triangulate data where possible

Common Approaches to Observation

Simple observation

▶ User is given the task (or not), and evaluator just watches the user

▶ Problem: no insight into the user's decision process or attitude
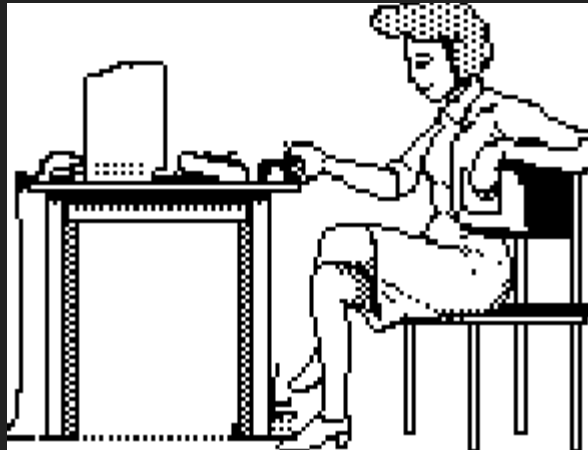
Think aloud method

▶ Subjects are asked to say what they are thinking/doing:
  ▶ What they believe is happening
  ▶ What they are trying to do
  ▶ Why they took an action
  ▶ Gives insight into what the user is thinking

▶ Problems
  ▶ Awkward/uncomfortable for subject (thinking aloud is not normal!)
  ▶ "Thinking" about it may alter the way people perform their task
  ▶ Hard to talk when they are concentrating on problem

most widely used evaluation method in industry

Hmm, what does this do? I'll try it... Ooops, now what happened?

Co-discovery learning

▸ Two people work together on a task:
  ▸ Normal conversation between the two users is monitored
  ▸ Removes awkwardness of think-aloud, more natural
  ▸ Provides insights into thinking process of both users
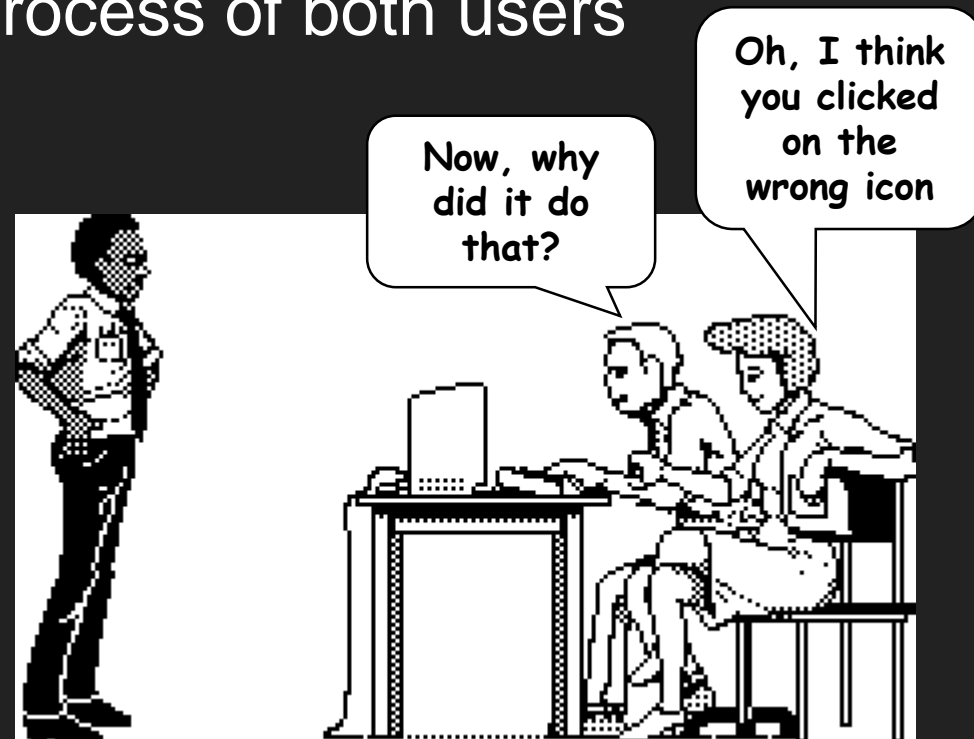
# Indirect method

- Collect data from participants indirectly, e.g.,
    - Diary studies
        - Self reports; good for long distance studies, while still getting participant insight
        - Problems: participants memories and participants themselves can be unreliable
    - Interaction logs
        - Unobtrusive way of recording behavior, actions, time, etc.
        - Problems: can generate a lot of data, which can be very time consuming to analyze effectively

In-class activity (20 min)

- Origami observation

- Break out into teams or form groups of 7-8

- One member will follow the instructions to create the origami

- The others will observe the process and take notes
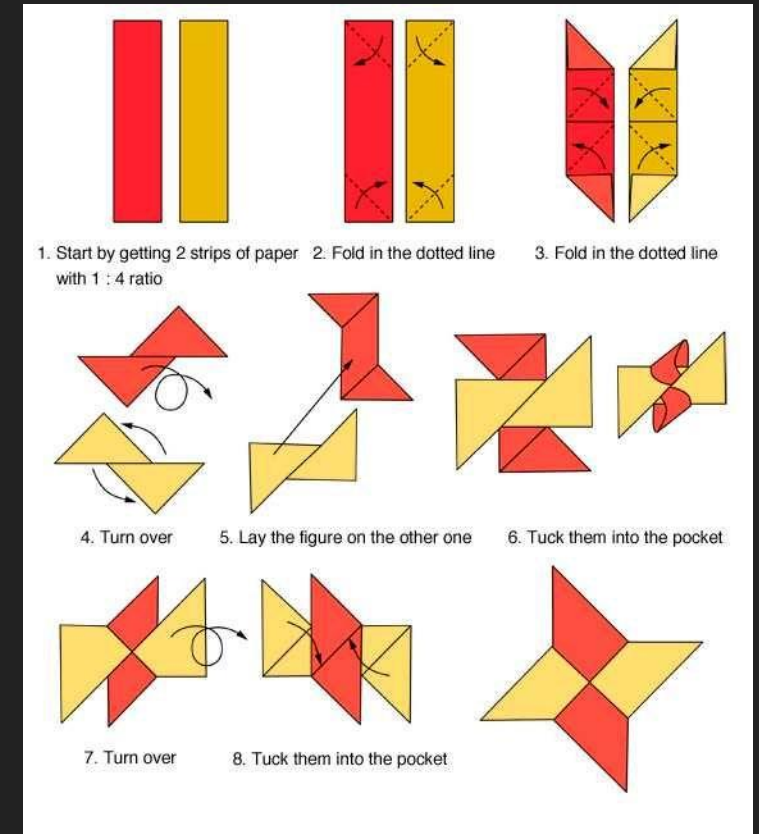
In-class activity (20 mins)

- Make a new slide for your group

- Write down group members' names

- List observation notes

- https://tinyurl.com/85676532

Optional Reading

▶ Porcheron, Martin, Joel E. Fischer, and Sarah Sharples. "Using mobile phones in pub talk." *Proceedings of the 19th ACM conference on computer-supported cooperative work & social computing*. 2016.

▶ https://drive.google.com/file/d/1s5jUqRjLE7PX0IXXuC4iJCfUbLf6DFba/view?usp=sharing