



Discovery

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<http://cs147.stanford.edu>



**“You Can Learn a Lot
Just by Watching”**

—Yogi Berra

Today

- Approach
- Doing Observational Work
- Announcements & Questions

APPROACH

WHEN USER
HITS MACHINE

LUCY SUCHMAN

Variety of observation techniques

- Contextual inquiry
- Ethnography
- Diary studies
- Prompted (pager) studies
- Cultural probes
- Task analysis

ETHNOGRAPHY

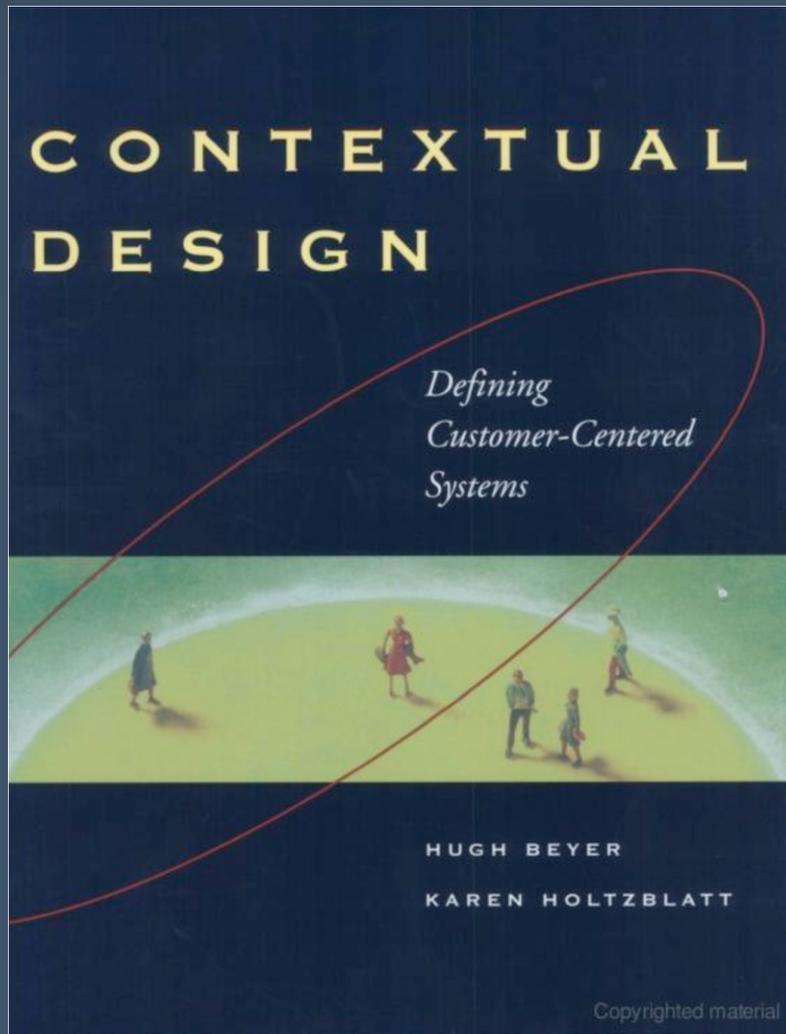
Goals

- Natural
- Holistic
- Descriptive

ETHNOMETHODOLOGY

The Practical Logic of the Everyday World

More about Contextual Inquiry



Collections Designers Keep. Contextual Inquiry of designers in NL. Tu Delft. ID-StudioLab

What is Context?

- Activity in its actual place
- Artifacts and tools
- The ecology around it

How to perform Contextual Inquiry?

- Set up a partnership with the people to be observed
- Be taught the steps in the process
- Observe all of the practices
- Validate what you are observing with those observed as you go along

How to record a contextual inquiry

- Notes
- Camera
- Action

Discovery is the root of design

1. **Discovery**
2. Exploration
3. Refinement
4. Production

Observation is at the heart of Discovery

1. Set goals
- 2. Observe**
3. Synthesize

The Discovery process yields ...

1. What users do now
2. What values do the users have
3. How the users activities are embedded in an overall “ecology”

Don't just observe process, observe the practice

Process

- Step one
- Step two
- Step three



Ask Why's?



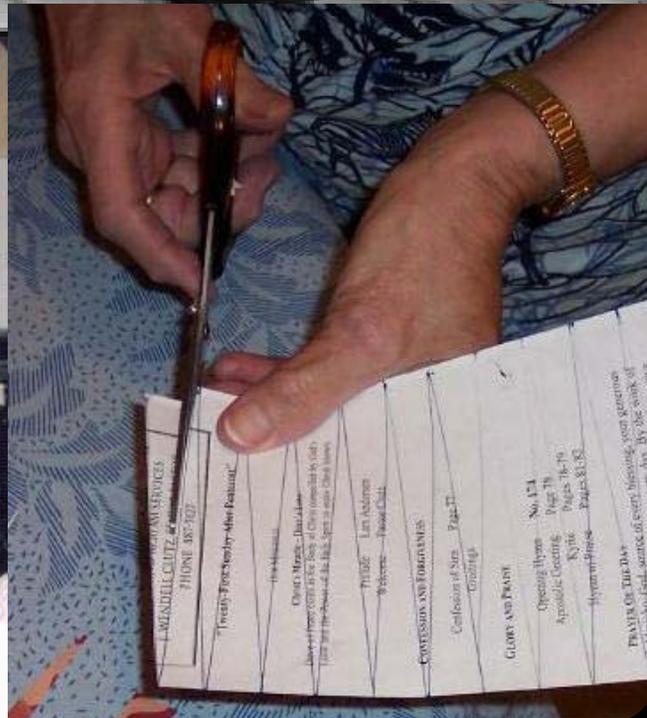
Practice



- A thousand word picture

Process v. Practice
Jack Whalen & the Call Center

Tacit Knowledge



RENDERLITZ & ASSOCIATES
PHONE 88-707

"Twenty-Five Years - Now Featuring!"

CHURCH MEMBERS - *Donna L. L...*
Always a member of the Church at Christ (formerly by God's
grace) and the mother of the Holy Spirit in unity, Christ's love.

PRIDE - *Lin Ashman*
Welcome - *Theresa Clark*

CONFESSORS AND FORGIVENESS
Confession of Sin - *Page 17*
Cantata

GLORY AND PRAISE
Operatic Hymn - *No. 124*
Apostolic Creed - *Page 78*
Kyrie - *Pages 16-19*
Agnus Dei - *Pages 81-85*

PRAYER OF THE DAY
Almighty God, source of every blessing, ever generous
to thy people, grant us thy grace every day. By thy Son, Jesus, our
Savior, Amen.

“That’s Obvious!”

Deep Hanging Out

A Shifting Landscape



DOING OBSERVATION

**Makes Explicit Much of What
Good Design Does Implicitly**

The Importance of Being Curious

Reflective Practice

DESIGN IS ABOUT CHOICE

- “Does your employer or his representative resort to trickery in order to defraud you of your earnings?”

- “Is the daily update an important feature to you?”

GOOD QUESTIONS

- Are open-ended
- Avoid Binary Questions
- Let Silence Happen

Erring in the Other Direction...

- “Tell me a story about yourself”

**Plans are useless, but planning is
invaluable**

What works better
(Snowboarding with Scott)

**PAY ATTENTION TO
ARTIFACTS**

Say you were designing...

- A lecture support system
- Here are my steps

Finding People...

Rocket Science

What people can't tell you...

- Functional fixedness: People understand their world within a structure that imposes limitations. It's hard to see outside that structure.
- What they *would* do / like / want in hypothetical scenarios
- How often they do things
- The last time they did something
- How much they like things on an absolute scale

So, you cannot simply ask people what features they would like in a tool.

What people can tell you...

- What they “generally” do
- How they do it
- Their opinions about their current activities
- Their complaints about their current activities
- How much they like one thing compared with another

Creating an interview protocol

- Figure out who to interview
- Structuring the interview
 - Start with demographics, overall goals, high-level tasks, company policies, etc.
 - Move on to more open-ended questions (have them walk you through a task/day, what works well, what doesn't?)
 - Cycle back to more detailed questions

Interviewing tips

- Introduce yourself, explain your purpose
- The interview is about them, not you!
- Ask open, unbiased questions
- Ask the question and let them answer
- Follow up
 - Adjust your questions to their previous answers
 - Ask questions in language they (use) understand
 - Pick up on and ask for examples
- Be flexible

Who's doing all the talking

- Strive for about 20% (or less!)

Recording the interview

- Interview in pairs
 - One person interviews, the other takes notes & listens
- Audiotaping
 - Accurate record of the interview
 - Great for mining lots of information per interview -- your notes will never be as complete
 - Helpful if impressions change as you interview others
 - Tedious to review later (but well worth it)
 - Helpful for presentations - makes the people real
 - Get permission in advance - be aware of security issues

Recording the interview

- Videotaping
 - Same advantages and disadvantages as audiotape
 - Even better for communicating findings to others
 - May be harder to get permission
 - More issues of confidentiality
 - May make people less willing to divulge sensitive information
 - If you can't videotape, take snapshots

Where should you interview?

- In their setting (i.e. their office, home, car, etc.)
 - Gives you much better insight into their activities
 - Gives you a chance to see their environment
 - Allows them to show you rather than tell you
- If not possible to interview in their setting, ask for a tour before or after

Before you go...

- Take a trial run with colleagues or friends
 - Gives you practice interviewing
 - Irons out problems with the questionnaire, redundancies, inconsistencies

After the Interviews

- Keep photos and other concrete details around
- Concrete people help tie all design to use, rather than debating things on an abstract plane

WWMPD?

THICK PRACTICE Medical Records

ER ROYAL INVERMUR
A. R. JANSOSIDE

Handwritten notes on a form, including a name and address.

FEMALE
SINGLES
4867

CANCELLED

26/11/89

105, Mount St South
Mar 14

4-000 8545

Date	Clinical Notes
25.11.95	Seen at Pt. Acute cystitis, 50y, 6d. Going to Spain until 16/2. Cont. R
11/11/95	at eye clinic
20/3/96	at eye clinic Lenses - drops the eye. very inactive. at emergency for eye. Pain, light & vision disturbance. Subst. - started L.H. (eye) today.

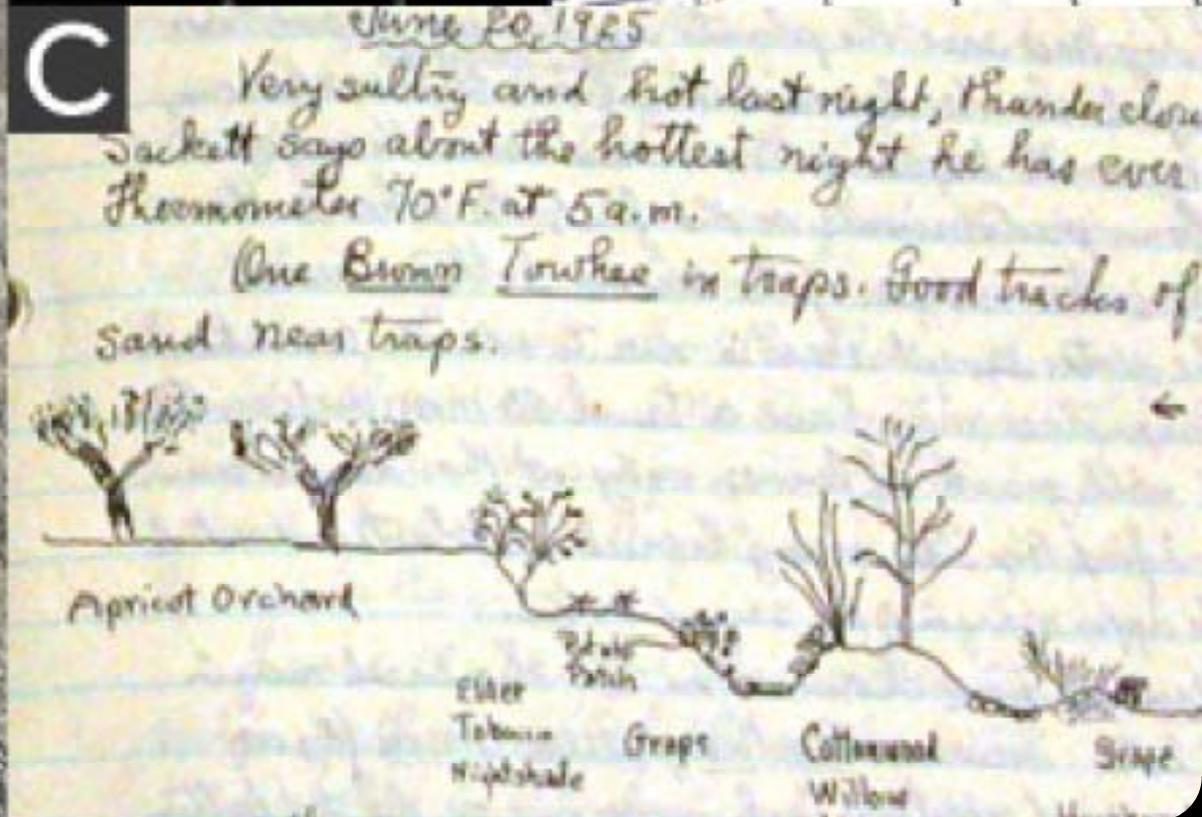
Date	Clinical Notes
12-1-97	✓ Pain low back sudden onset 3d. Severe Og tender L2 region rest. of opp 20/yr. little - leisure - day kind.
14-1-97	✓
18-1-97	✓ Spoke to her lawyer - ! admit to her lawyer
02/11/95	⊙ recently diagnosed, large mainly white sperm the other cracks over → H. meningitis CR.
25-11-95	✓ plus gain; hot flushes. Onset about 11 week after ovulation. Research line to open & will settle Ch ✓ 21/1/96
6/11/95	✓ Elderly woman T. appeared and moved back into the GP - Dr. G. P. or Dr. P.

THICK PRACTICE

Final Scratch



THICK PRACTICE
Field Biology



THICK PRACTICE ButterflyNet

→ more dramatic inflorescences

araceae monster



light demanding
germinate on forest floor, grow up a tree trunk
new tropism
→ grows towards something
"skatotropism"
→ directs plant to a source of darkness (i.e. tree trunk)
(not negative phototropism)

collect runoff / w/ nutrients from tree
will eventually change morphology

legumes predominate here



→ Inga → compound leaf
gland makes nectar for ants, ants defend plant → mutualism
winged
extrafloral nectary (gland)

Sun Mar 20 14:02:22 PST 2005 ...
Mon Mar 21 15:07:54 PST 2005

4

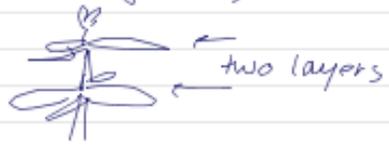
costus → 2 types here (one is eaten much, one doesn't get eaten)
→ what is the difference
velvety
glabrous

moraceae (figs)
CHI 2006 (quickly coo'ing, close)

epiphylls → things that grow on leaves
many Inga species

* termite mound

Cordia
→ high quality wood



"leaf mining" → microlepidoptera
type of herbivory
larvae eat around inside "epiphyllism" leaf → protected inside leaf.

Burseraceae Bursera

→ living fence tree
dioecious
bark peels off (red)
→ "exfoliating bark"
green stem (fruit) → photosynthesizes (lenticles)

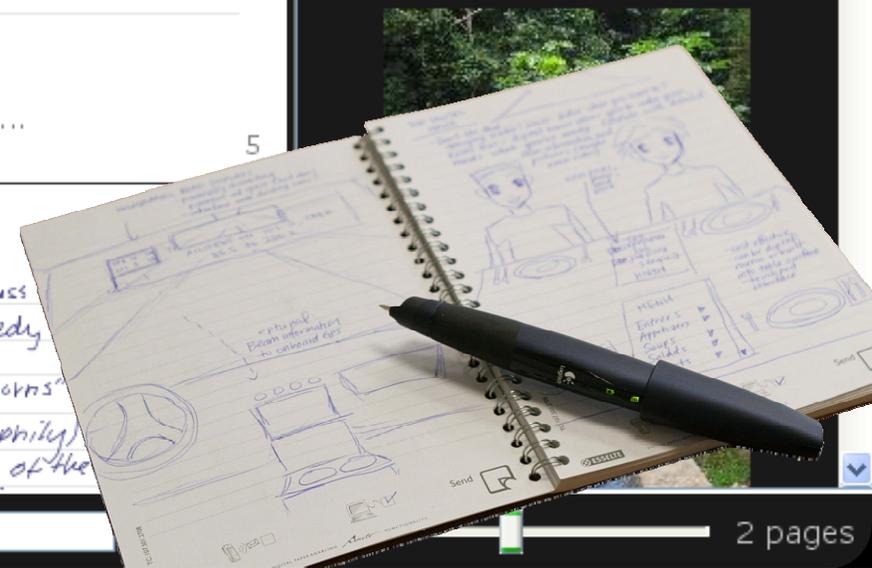
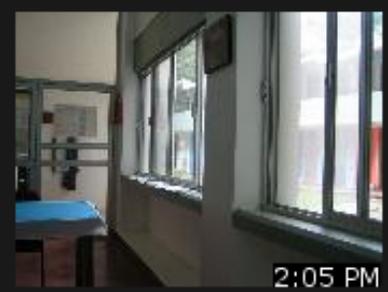
Costus → interesting in flower
→ ginger, lots of herbivory

Sun Mar 20 14:15:20 PST 2005 ...
Sun Mar 20 14:31:42 PST 2005

5

piper → monoecious, sasapras
auritum → light greedy

legume
acacia → cornigera → "horns"
→ mutualism (myrmecophily)
ants live in thorns of the



Eye to future: in situ diary studies

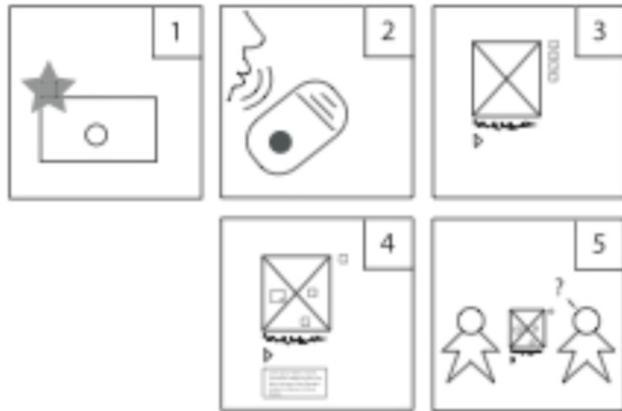


Figure 2. Proposed media elicitation pipeline: 1) A participant takes a photo 2) The participant annotates the photo with an audio recording 3) The participant uses a tool to log the photo and audio and add more annotations 4) The researcher provides feedback about the captured data 5) The researcher holds an elicitation interview with the participant using the captured media as prompts.

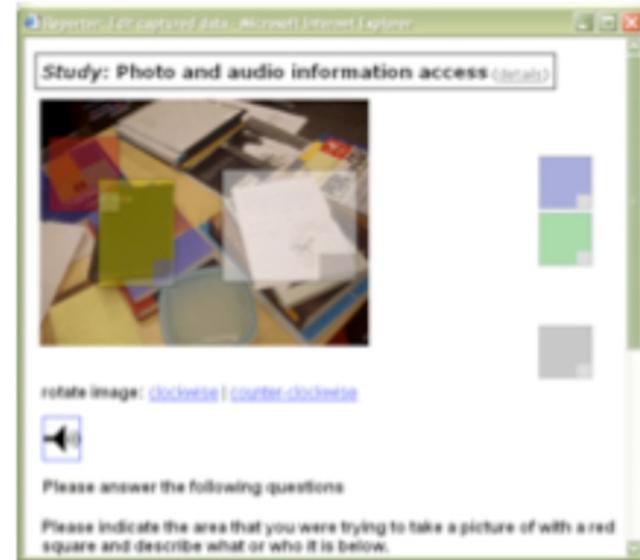


Figure 3. Reporter's Web interface. The participant has repositioned and resized rectangles as per questions asked by researchers, including the object that the participant intended to capture (upper left of the photo) and any other information that the participant felt was important in the scene (center and right of the photo).

Eye to future: txt 4 l8r, diary studies innovation



figure 1. The system diagram for our implementation of the snippet technique.



figure 2. Example of a typical paper-based *in situ* entry recorded in the notebook provided to participants.



Mom appt?

IM tivo

Pdra 4 wrk

figure 6. Examples of text and picture snippets recorded by study participants.

Questions

- About the assignment
- About studio today & tomorrow
- About class in general

FOR TUESDAY

- Reading: Contextual Design
- In general: we went to great lengths to pick seven readings, and they're all really good
 - As opposed to picking 15 plus another 10 optional readings.
 - Okay, I cheated – there's one optional reading, but it's a comic book