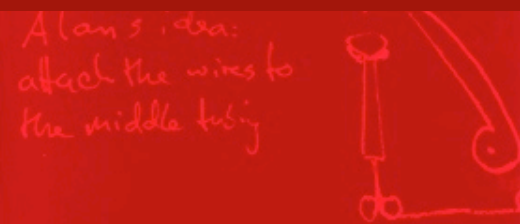


# Need-finding & Discovery

**Scott Klemmer**  
*Autumn 2009*



Bill: copyright  
visualization of license



Scott: a gate that shows  
who walked through it last  
Bill: a gate that measures  
ceremonial gates

“You Can Learn a Lot  
Just by Watching”  
—Yogi Berra

WHEN USER  
HITS MACHINE

LUCY SUCHMAN

My being star-  
struck

# Variety of observation techniques

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

# ETHNOGRAPHY

Writing about Culture

Began with “other” cultures, moved to our own

Bronislae Malinowski, from Wikipedia, “In 1914 he traveled to [Papua](#) (in what would later become [Papua New Guinea](#)), where he conducted fieldwork at Mailu and then, more famously, in the [Trobriand Islands](#). On his most famous trip to the area, he became stranded. The [First World War](#) had broken out, and, as a Pole from Austria-Hungary in a British controlled area, Australian authorities gave him two options, to be exiled to the Trobriand islands or face internment for the duration of the war. Malinowski chose the Trobriand islands. It was during this period that he conducted his fieldwork on [Kula](#) and advanced the practice of [participant observation](#), which remains the hallmark of ethnographic research today.”

# Everyday

What sociologists do is not categorically different than what we do in everyday life; the only different is that sociologists are more reflective about it  
(in contrast with focus groups)  
Natural, Holistic, Descriptive  
Real place, with tools, and ecology

# Tacit Knowledge



A collegiate basketball player shooting hoops; an architect at a drafting table; a crafter cutting pieces of paper and a musical band in concert- these are a few examples of the complex, actions people perform.

And in many cases, these physical action can be both faster and more nuanced than symbolic cognition.

One of the most powerful human capabilities is the intimate incorporation of an artifact into their practice to the point where people perceive that artifact as an extension of themselves: they act *through* it rather than on it

The crafter cuts the paper through the scissors; without focusing on her actions upon the handles of the scissors The violin virtuoso expresses himself through the violin, not on the fingerboard and bow. The puppeteer feels the ground underneath his puppet's feet, not the controls in his hands.

Polanyi termed this incorporation tacit knowledge and it lies at the core of skillful action.

# One technique: become an apprentice

- 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

# Looking for workarounds & hacks

“I am not a fan of undirected, explorative ethnography. This is an excellent procedure for developing our scientific understanding of human behavior, but it is too diffuse for practical application. I prefer directed observation: search out the workarounds, hacks, and clever improvisations of everyday life. That’s where the answers lie: someone else has already encountered the need, someone else has already hinted at a solution.”  
- from Don Norman’s [http://jnd.org/dn.mss/workarounds - leading edge of innovation.html](http://jnd.org/dn.mss/workarounds_-_leading_edge_of_innovation.html)

1. Set goals
2. Observe
3. Synthesize

# Documenting Fieldwork

- Notes
- Camera
- Action

# Discovery is the root of design

GOOD CHOICE COUNTS A LOT  
ESPECIALLY AT THE BEGINNING OF THE PROJECT  
Pick a good environment, and you'll have a good problem

# 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

“That’s Obvious!”

# The Importance of Being Curious

CS270  
As opposed to “being vacant”

- “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?”

How about “What are your thoughts about the daily update”  
If this sounds a bit like psychoanalysis, well, ...

# GOOD QUESTIONS

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

# Erring in the Other Direction...

- “Tell me a story about yourself”

This rarely works, as most of us don't have an index  
If it does yield a response, You'll just get something that's rehearsed

Plans are useless,  
planning is invaluable

PAY ATTENTION TO ARTIFACTS

# Say you were designing...

- A lecture support system
- Who would you interview?

# Finding People...

Is Hard  
& scary  
Joel's going to Adobe MAX

# 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

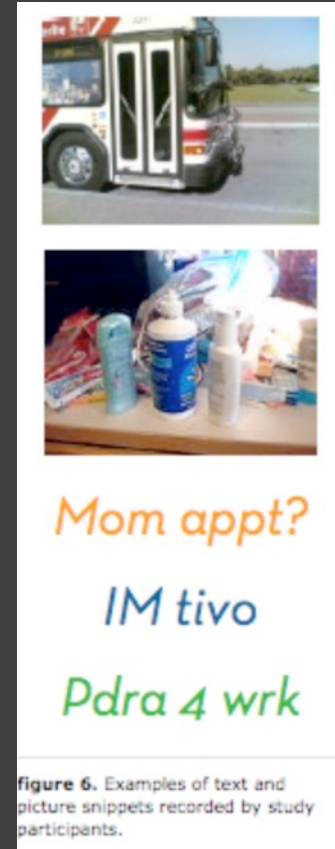
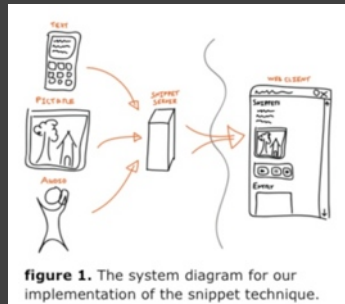
# Before you go...

- 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

# Eye to future: txt 4 l8r



# Questions