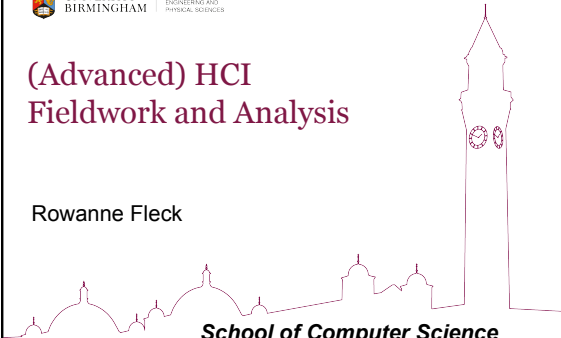


UNIVERSITY OF
BIRMINGHAM

COLLEGE OF
ENGINEERING AND
PHYSICAL SCIENCES

(Advanced) HCI Fieldwork and Analysis

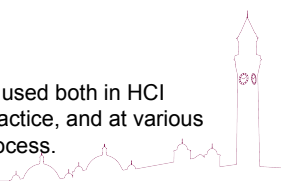
Rowanne Fleck



School of Computer Science
University of Birmingham 2016/17


Last time...

- Described some methods for understanding users better
 - Interviews
 - Focus groups
 - Questionnaires
 - Observations
- These methods can be used both in HCI research and design practice, and at various stages in the design process.



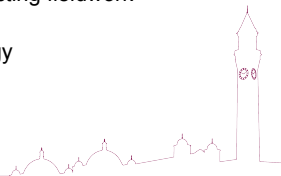
Today...

- Will talk about fieldwork and ethnography
 - Cultural probes
- Choosing a method
- Qualitative research methods and affinity diagrams



Fieldwork and Ethnography

- Fieldwork – research conducted in a natural environment, rather than a lab
- Ethnography
 - an approach to collecting fieldwork materials
 - Roots in Anthropology



Design-oriented ethnography in CSCW

- Suchman's *Plans and Situated Actions*
- Study of photocopier use
- Interactions with technology are situated in social practices
- Rejection of cognitive science models that treat plans as fixed sequence of actions
- Ethnomethodology



Example – Tourist Information Office (Marshall et al. 2011)

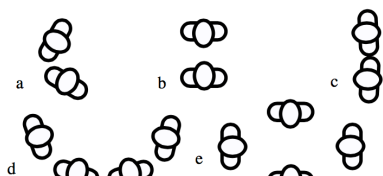


Figure 2: some different F-formation configurations.
a. L-arrangement; b. face-to-face; c. side-by-side; d. semi-circular; e. rectangular



Example – Tourist Information Office (Marshall et al. 2011)

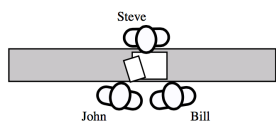


Figure 4: two people form an F-formation with the counter assistant

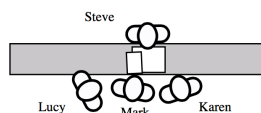


Figure 6: F-formation with one participant occupying an outer position in the r-space

Key characteristics

- Participant observation
 - Interviews, observations, participation in activity
- Interpretation
 - Through 'thick' textual description
- Analytical orientation
 - Ethnography isn't just description

Cultural and Informational Probes

Cultural Probes: Gaver et al. 1999



- packs of materials e.g. maps, cameras, diaries, postcards
- generate discussions
- designs that were relevant
- not aiming to design solutions for needs
- instead, provide "opportunities to discover new pleasures, new forms of sociability, and new cultural forms."
- *inspiration for design*

Informational probes

- Preoccupation with safety and security
 - residents increasingly cut off from friends and family
- Worries about managing medication



Which method to choose ??!

- Can use multiple methods
- Depends on the
 - Focus of the study
 - What are you trying to find out?
 - What stage of research/in the design cycle are you at?
 - Participants involved
 - Resources available
 - Time available



Understanding Findings: Quantitative vs. Qualitative data analysis

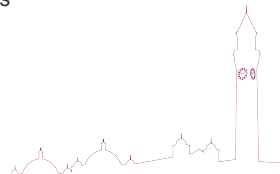
- Quantitative
- Qualitative



Image: <http://www.oxfamblogs.org/fp2p/?p=10273>

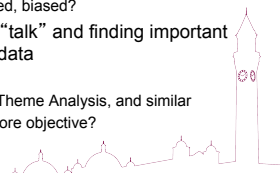
Qualitative Data Analysis Techniques

- Initially – get an overview of the data
- Identifying recurring patterns or themes
- Categorize data
- Analyze critical incidents



Two main approaches

- Top-down: Knowing what you're looking for and coding specifically for that
 - E.g. errors, terminological confusions, specific concepts
 - Taking a particular theory and using that as a filter on analysis (e.g. F-formations)
 - Faster, more direct, constrained, biased?
- Bottom-up: Letting the data “talk” and finding important ideas that emerge from the data
 - Inductive method
 - Grounded Theory, Emergent Theme Analysis, and similar
 - Slower, exploratory, looser, more objective?



Coding data

- Open coding: identifying important ideas
- Axial coding: identifying new relationships in the data
- Selective coding: generating a focus and building up themes around it
- Can be supported by tools such as Atlas Ti and NVivo – BUT you still have to do the work!
 - Highlighter pens
 - Spreadsheets
 - Mindmaps
 - Post-its...



Case 18.xls										
Time	SP	Transcript/summary	Reflection	RL	Focus	Notes	Collaboration Notes	Collaborator's ref/colab	Collaborator's codes	image use codes
1	SP	right ok. Because you've got, well you can't see... can't see all of them, but you've got quite a few faces looking in this direction					m uses images as evidence to support what T is saying	revi	explain	revi 1
54	SP	think that... which's going on the board again from ab 2 is the middle							explain	id
60:04:19	SP	yeah, that I really have it's evidence to be for							explain	id
67	SP	ok, I think we're making through the concepts there							explain	id
68	SP	now perhaps he's speaking to N quite a lot as well							explain	id
69	SP	[R] Observation from P9, followed up by reflection from M, including sharing of prior knowledge/experience of student. Given this, M is also surprised/disappointed in the student. Vagely, disingenuous							explain	id
70	SP	yes, yeah, disappointing							explain	id
71	SP	[just quite sure...]							explain	id
72	SP	[but and her friend] who she's, it, she's, both have getting into a bit of trouble recently. Then excluded for quite a number of days at the minute, so you would have thought, so you would have thought actually she being away from that influence, they'd be better							explain	id
73	SP	[when I went back her when goes her back her report, she looked quite disappointed she was in a bit, she thought she'd be on an 11 now time]							explain	id
74	SP	another reason why he's disappointed/surprised at students behavior							explain	id
75	SP	then, yeah, so we were making through the Shakespearean 1, there was three of them, so we were trying to							explain	id
76	SP	[and we were trying to] I just wondered what that was							explain	id
77	SP	yeah, that's the best way to							explain	id
78	SP	that thing coming down her head							explain	id
79	SP	so how do you feel looking at this then?							explain	id
80	SP	M prompts reflection - that the student wasn't enjoyed much. P9 gives a possible reason							explain	id

Affinity Diagrams (Beyer and Holtzblatt, 1998)

- Technique for finding emerging patterns

- E.g., <https://www.youtube.com/watch?v=f6QHKw15tGI>



Image: http://www.baran-systems.com/Products/Affinity%20Diagram%20for%20Excel/index_concept.htm

Lecture Summary

- Talked about fieldwork and ethnography
 - Cultural probes
- Choosing a method
- Qualitative research methods and affinity diagrams

- NEXT TIME
 - Feeding findings into the design process
 - personas and scenarios

Readings

□ CORE

- Crabtree, A., Hemmings, T., Rodden, T., Cheverst, K., Clarke, K., Dewsbury, G., Hughes, J. and Rouncefield, M. (2003) Designing with Care: Adapting Cultural Probes to Inform Design in Sensitive Settings. Proceedings of OzCHI 2003, Brisbane, Australia

□ Additional

- Marshall, Paul, Yvonne Rogers, and Nadia Pantidi. "Using Formations to analyse spatial patterns of interaction in physical environments." *Proceedings of the ACM 2011 conference on Computer supported cooperative work*. ACM, 2011.
- Video about ethnography:
<https://www.youtube.com/watch?v=6lzz3DIEWQ>
<http://www.usabilitynet.org/tools/affinity.htm>
- Video about affinity diagramming:
<https://www.youtube.com/watch?v=f6QHKw15tGj>
- Beyer & Holtzblatt (1998) *Contextual Design*. Morgan Kaufmann: Chapters 3 - 6