Swansea University
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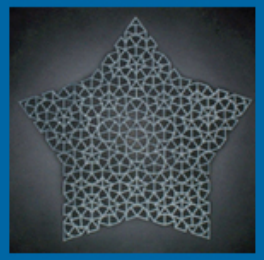
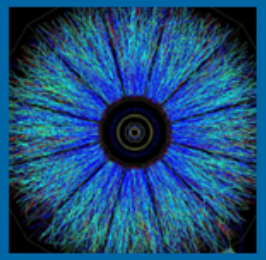
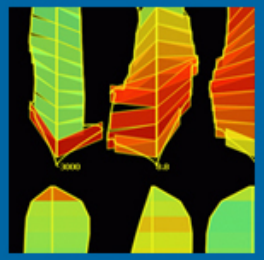
CSC349 User Experience

Scoping Techniques: Qualitative and Quantitative

Lecture Summary

There are a wide range of different techniques you can employ to initially scope out your design domain (and throughout the design process)

Discuss the differences between quantitative and qualitative work and their relative strengths and weaknesses

Interviews are commonplace and have several variations but require specific skills to be useful

Focus groups are a distinct technique set apart from interviews by their facilitation of the **co-questioning** phenomenon

Quantitative vs. Qualitative Data Analysis

Quantitative (countable)
Stats, %s, average times, rate of improvement

Qualitative (the qualities of something)
Textual, explanation, quoting, *Coding analysis*

Which one is better? We need to consider what type of data we need

Quantitative pro's and con's

Strength: Allows for a high level of quantified confidence in results when done right

Weakness: it has limited powers of explanation

Strength: Considered 'more scientific'

Weakness: Correlation != cause-and-effect

e.g. lung cancer is more common in heavy drinkers, but is not caused by drink!

Qualitative pro's and con's

Strength: Good at explanation so frequently used in exploratory and/or field studies

- Used mainly for structuring quoting from interview data

Weakness: poor at measuring

Weakness: often called 'soft' or not 'reproducible'

- Sometimes people even say it's not real science!

When would you make best use of qualitative data analysis?

When would you make best use of quantitative data analysis?

Interviewing

One-to-one or one to many conversations that are used to understand the area you need to work in

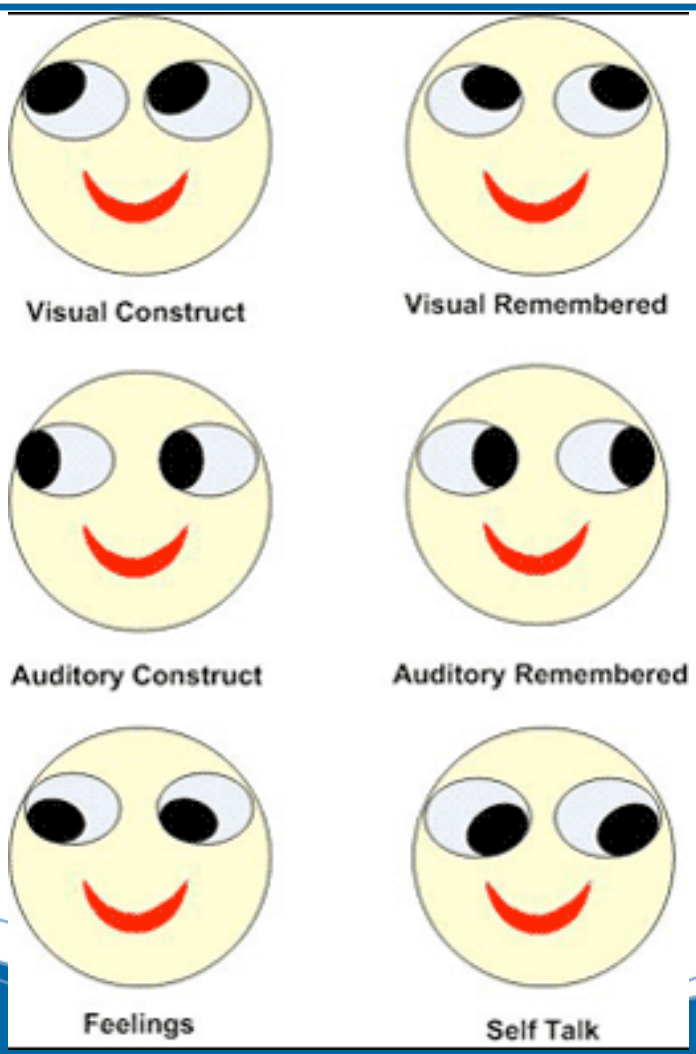
Asking your participants questions and *recording* their answers

Are also often used in conjunction with the following:

- Direct observations (since interviews are retrospectively subjective meaning people make sense of what happened)
- To elaborate on surveys (prompting material)
- To discuss diaries
- To augment the results of user studies

Interview skills

- Conversational & Observational skills & note-taking & decision making all at once!
- Moving conversations along & elaborating on points of interest
- Revising questions on demand for natural conversation
- Reading and interpreting subtle body language & waiting...



What do you think the difference between a 1-many interview and a focus group is?

Focus Groups

One or more facilitators and many participants (4-8 typically)

Co-questioning – participants eliciting information from each other allows you to elicit information you wouldn't get otherwise because you wouldn't think to ask about it

- Clue in the researcher's name: facilitator vs. interviewer

Can allow for more personal discussion

- Or it can have the opposite effect

Recording and transcription

Always read/rewrite notes straight after the event

If recording – 6-10 hours per hour of interview

Aim - to correctly communicate the totality of interviews

Qualitative methods (see later - and reporting Qual results)

Quantitative methods can be used if structure is fixed

A New Problem and Solution

You've been asked to evaluate an existing bug-free but entirely useless piece of software used by a group of engineers in a large engineering firm at the start of a design process.

How do you go about understanding why it's not working for the engineers and how the system can better support their work?

Introducing Ethnography

An in-depth understanding of the design space requires more than just talking to people who work there

- “Ethnos” meaning folk or people and “Grapho” meaning to write
- Reflects the knowledge and the system of meanings in the lives of a cultural group
- An ethnography is a means to represent, graphically and in writing, the culture of a people

Ethnography approaches are ones in which the designers go into an environment and observe the people

- More than observation though, they embed themselves in the environment

Ethnography and Time

Ethnographic approaches are time consuming and in-depth

- Typically need to spend a minimum of a day in an environment observing people
- Might spend much more time than that if you are working in a particularly challenging area

Can be several months of in-depth investigation

Can be an essential, regular part of every design or evaluation depending on the group you work with

- You can interview until you go blue or get diaries but sometimes you need to just get stuck in

Decisions in Ethnography

1. Where will you go?
   - Specific place or example places?
2. Who will you be?
   - In order to participate in the process you are observing
3. How embedded do you become?
   - Do you actually become homeless? Will you be accepted if you do not?

Ethnography: An Example

Aim: To study communication and coordination

Method: Ethnographic shadowing of 19 workers for 2 weeks

Measurements: 550hrs data and 13,000 logged events

Analysis: Qualitative coding (future class)

Outcomes: A detailed understanding of the coordination and communication issues in the workplace

Large Scale Surveys

In contrast to doing ethnographic work, large surveys allow us to determine the prevalence of a given event or phenomenon

- Often used to gain a sense of the prevalence of ideas uncovered in qualitative interviews or other similar work

Allow us to build a strong evidence basis for our design choices

- But not suitable for evaluation of early sketching because the volume of ideas is to great and sketching is not the right medium

Can be conducted online, through post, face-to-face, or…

Survey Design

The purpose of a survey is to gather a large volume of feedback quickly

As a result the design of a survey needs to support getting many completers

- Make it easy to complete and return
- Make it obvious how long it will take to finish the survey
- If possible, aim to have a one page survey

DO NOT ASK UNECCESARY QUESTIONS

- When writing a survey ask yourself “How will I use this information? What will it change?”

Survey Design: How many people do I need?

How many people do you need to ask?

The answer depends…

- Do you want evidence that is going to be statistically significant (then it's at least 30)
- Do you want guidance in making a choice about your design (then it's up to your intuition)
- Do you want some lightweight guidance on a pair of design alternatives? (then it's 8-10)
- Do you want to gain evidence for a large scale change in your business (then it's possibly 100,000s)

Likert Scales

How much are you enjoying this lecture?

1 (not at all)	2	3 (neutral)	4	5 (a great deal)

Likert scales are extremely common in surveys

- You've all seen them in student feedback

Are the results of a Likert scale survey Qualitative or are they Quantitative?

Likert Scale Design

They can be used for stats tests (controversial though)

- Data is ranked so a score of 3 is greater than a score of 1 (like shoe size)
- But data is not interval (a score of 4 is not twice as much as 2 unlike when working with height for example) meaning only certain stats tests work

Design choices

- If you have an odd number of points most people will pick the middle
- Make sure that you are consistent about what your numbers mean as people will not read questions carefully
- Test your survey before you use it!

Next Steps: Taking data into design

Scoping allows us to understand a design space by gathering data through interviews, focus groups, surveys, etc. but how are we going to make use of this data in design?

- Subjective impressions of the data might change what we do
  - But how do we capture those decisions and avoid arguing about them over and over again?

What techniques might we use to capture the requirements that our scoping work uncovers or the ideas that it inspires?

Lecture Summary

Interviews and Focus Groups are the core of design work with many participants

- However, they are the middle of the road in terms of the strength of evidence/detail they gather

Ethnography is a method for gaining much deeper insight into a problem domain

In contrast, Surveys give an avenue for much stronger evidence about the prevalence of something