Lecture 5
Qualitative Analysis

UNIVERSITY OF AUCKLAND
COMPSCI 705 / SOFTENG 702
Dr. Danielle Lottridge
Let’s get some data to analyse

- Reflect on what you’ve learned in this course so far (if anything)
- Get in pairs for a 4-minute semi-structured interview
- Interviewer takes at least 8 notes on post-its while listening
- First Q: What have you learned so far in this course?
- Interviewer decides on follow up questions.

- Switch roles.
Learning Objectives

- Understand basic concepts in qualitative analysis
- Be able to analyse qualitative data
Outline

- Qualitative data
- Approaches to qualitative analysis
  - Affinity diagram
  - Grounded theory method
  - Thematic analysis
Qualitative data

- Verbal data from open ended questions
- Interview data
  - observation data
  - document data
  - audiovisual data
- Text and images
Qualitative data example from Google

**CHROME BROWSER**
kodiak cakes cinnamon rolls - Google Search
Cinnamon Roll Microwave Mug Cake | Kodiak CakesKodiak Cakes

**MYFITNESSPAL**
MyFitnessPal
Approaches to qualitative analysis

- Forms of “coding”
- Approaches to qualitative analysis
  - Affinity diagram
  - Grounded theory method
  - Thematic analysis
- Standards for rigour
  - referenced method
  - clear definition of saturation
  - emerging: positionality
Saturation

- Arrive at a point in research where no new themes are learned
  - stop data collection / participant recruitment
  - stop data analysis
- Defining saturation has been debated
Forms of “coding” qualitative data

– Open: identify categories
– Axial: “flesh out” and link to subcategories
– Selective: form theoretical scheme
Affinity Diagrams
Grounded Theory

- Derives theory from systematic analysis of data
- Based on categorization approach
- Curiosity, Creativity, Surprise
- Based on categorization approach
Case Study in Human Robot Interaction using Grounded Theory

THE PROCESS

Reading (and re-reading) a textual database (e.g., a corpus of field notes)

“Discovering” or labeling variables (called categories, concepts and properties)

Identifying interrelationships
OPEN CODING

Coding for concepts that are significant in the data as abstract representations of events, objects, relationships, interactions, etc.

Reliability analysis ensures objectivity of coding

Cohen’s Kappa, >.70 acceptable

I kicked it before and I was told not to… [laughs]…when it first came.

AXIAL CODING

Concepts are categorized into explanations of arising phenomena (e.g., repeated events, actions, and interactions)

Negative treatments of the robot

- abusing the robot
- yelling at the robot
- impersonating the robot
- naming names
SELECTIVE CODING

Integrate categories into a central paradigm—a “big picture” of the findings through building relationship across categories and contextualizing phenomena in data.

Diagramming or tables could be used to build relational models.
COMPARATIVE ANALYSIS

Compare the central phenomenon across several dimensions to understand how it is affected by social, physical, or organizational structures.

“[The robot] does tend to be annoying when [there are] 15 things are going on.”

“I think [the robot] is a delight. I think it works fine, as it is.”
THEORY BUILDING

Build a final theoretical model based on the results of the comparative analysis

“Embed” existing theory in this model
RECAP OF PROCESS

- Open Coding → Concepts
- Axial Coding → Categories
- Selective Coding → Causal Relationships
- Comparative Analysis → Stories
- Theory Building → Theories
## Alternative knowledge claim positions

<table>
<thead>
<tr>
<th>Postpositivism</th>
<th>Constructivism</th>
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<tbody>
<tr>
<td>Determination</td>
<td>Understanding</td>
</tr>
<tr>
<td>Reductionism</td>
<td>Multiple participant meanings</td>
</tr>
<tr>
<td>Empirical observation and measurement</td>
<td>Social and historical construction</td>
</tr>
<tr>
<td>Theory verification</td>
<td>Theory generation</td>
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<th>Advocacy/Participatory</th>
<th>Pragmatism</th>
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<tr>
<td>Political</td>
<td>Consequences of actions</td>
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<tr>
<td>Empowerment issue-oriented</td>
<td>Problem-centered</td>
</tr>
<tr>
<td>Collaborative</td>
<td>Pluralistic</td>
</tr>
<tr>
<td>Change-oriented</td>
<td>Real-world practice oriented</td>
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# Thematic Analysis

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<th>Phase</th>
<th>Examples of procedure for each step</th>
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<td>1. Familiarising oneself with the data</td>
<td>Transcribing data; reading and re-reading; noting down initial codes</td>
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<td>2. Generating initial codes</td>
<td>Coding interesting features of the data in a systematic fashion across the data-set, collating data relevant to each code</td>
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<td>3. Searching for the themes</td>
<td>Collating codes into potential themes, gathering all data relevant to each potential theme</td>
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<td>4. Involved reviewing the themes</td>
<td>Checking if the themes work in relation to the coded extracts and the entire data-set; generate a thematic ‘map’</td>
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<td>5. Defining and naming themes</td>
<td>Ongoing analysis to refine the specifics of each theme; generation of clear names for each theme</td>
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<td>6. Producing the report</td>
<td>Final opportunity for analysis selecting appropriate extracts; discussion of the analysis; relate back to research question or literature; produce report</td>
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Your turn...

Show all your post-its with a neighbouring pair.
Code them with thematic analysis.
# Thematic Analysis

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Practice Problem

Use these words to fill in the sentences below.

grouping    descriptive labels
coding      theory
counting    themes
            proportions

Content analysis involves _________ and gives _________.
Affinity diagrams involves _________ and gives _________.
Grounded theory method involves _____ and gives _________.
Thematic analysis involves _________ and gives _________.
Announcements and what’s next

- Interim Lit Review Slides due Tuesday 11am
- Sign up for a presentation slot