

Lecture 3.3

# Qualitative Analysis

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UNIVERSITY OF AUCKLAND

COMPSCI 705 / SOFTENG 702

Dr. Danielle Lottridge

# Let's get some data to analyse

- Use the two interview questions that you generated on travel
- Get in pairs for a 4-minute semi-structured interview
- Interviewer takes **at least 8 notes** while listening
- Switch roles. Share your notes.

# Learning Objectives

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

# Outline

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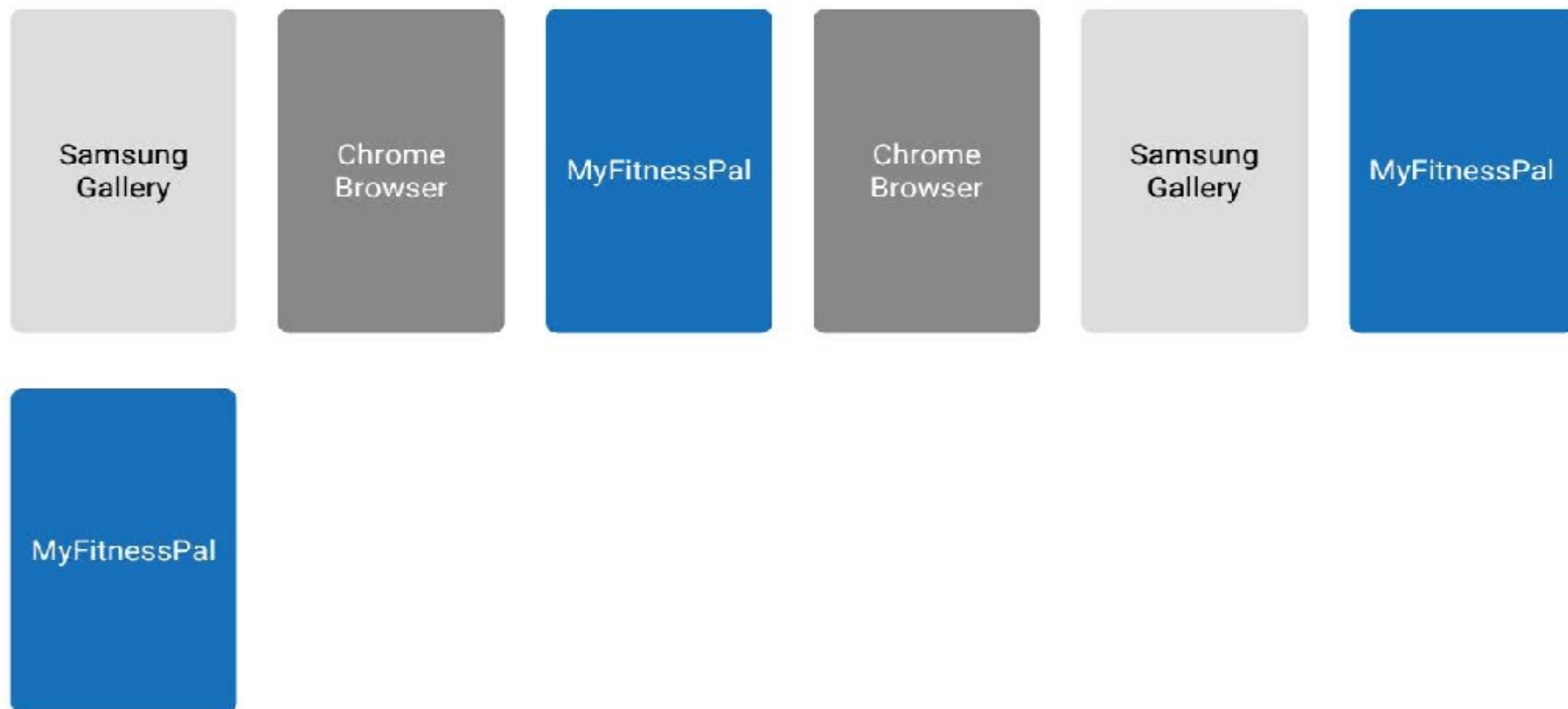
- Qualitative data
- Approaches to qualitative analysis
  - Affinity diagram
  - Grounded theory method
  - Thematic analysis

# Qualitative data

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- 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 Cakes Kodiak Cakes

## MYFITNESSPAL

MyFitnessPal

# Approaches to qualitative analysis

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- 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

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- 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

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- Open: identify categories
- Axial: “flesh out” and link to subcategories
- Selective: form theoretical scheme

## ams

Researcher: *unintentional* (perhaps) but *cannot* say *believe* *exists* a *link* *between* *crimes* *and* *children* *for* *sexual* *abuse*.

Handwritten: *Handwritten*

1. PV is always nonnegative because  
 the company has always chosen the  
 most efficient path to a given technology  
 (the company's strategy is efficient).

[illegible]

Need for confidence in the power of basic principles  
 + further research on the basic principles

**Multi-sensory stimuli** include all those stimuli a child may use to learn. These go up to 5 to 10 years, involve multiple senses for things at 5 to 10 years and beyond for 10 to 16.

Handwritten note on a yellow sticky note:

Handwritten note on a yellow sticky note:  
Handwritten note on a yellow sticky note:  
Handwritten note on a yellow sticky note:

Any situation in which the person has a right to be in the place is a legal right.

HR models of processing, in all applications, will fail very hard whenever the system does things that aren't specified in the model. They don't have the natural something's for doing

Mostly

increasing the size of the tax base and the  
provisions and availability of such payments and of  
taxpayers' ability to pay them. The provisions of the  
law are intended to be applied in a way that will  
allow the system to be applied.

...the ... ..

Multiple Choice Questions

Identifikasi Indikator dan Instrumen Pengukuran  
Indikator dan Instrumen Pengukuran  
Indikator dan Instrumen Pengukuran

Two yellow sticky notes are shown, one above the other. The top note is slightly offset to the left and has some faint, illegible markings. The bottom note is a solid, blank yellow rectangle.

Improvement of technology offers the desired strength for solution of problem. (Page 11 December 1970) (Page 11, 1970)

Before implementing marketing services, look at the service data and wait enough for the user to demonstrate when changing channels, support and how to get it. For the other day, give 1 day before to get.

...the ...  
...the ...  
...the ...

Re: 10/17/2020

تحت إشراف  
مديرية التعليم  
بمحافظة القاهرة

10

# Grounded Theory

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- Derives theory from systematic analysis of data
- Based on categorization approach
- Curiosity, Creativity, Surprise
- Based on categorization approach

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# Case Study in Human Robot Interaction using Grounded Theory

Mutlu, B., & Forlizzi, J. (2008, March). Robots in organizations: the role of workflow, social, and environmental factors in human-robot interaction. In *2008 3rd ACM/IEEE International Conference on Human-Robot Interaction (HRI)* (pp. 287-294). IEEE.

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# 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

{abusing the robot}

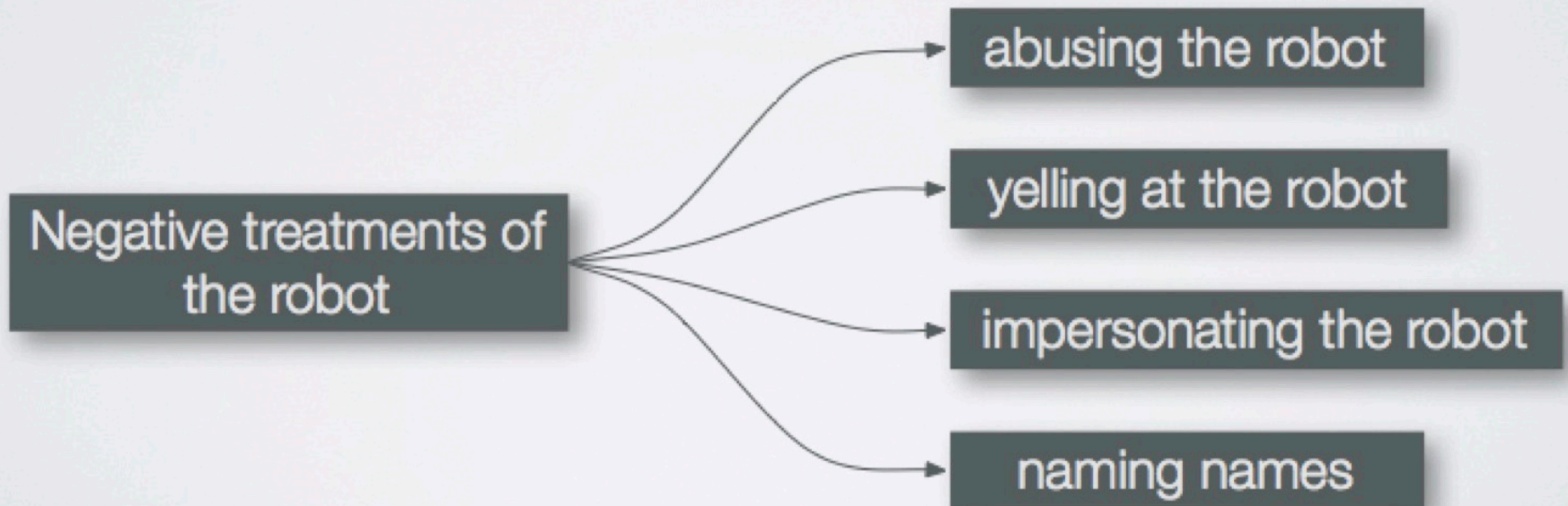
I kicked it before and I was told not to...  
[laughs]...when it first came.

\*

\* Mutlu, B. & Forlizzi, J. (2008). *Robots in Organizations: Workflow, Social, and Environmental Factors in Human-Robot Interaction*. In Proceedings of HRI'08 — Winner of the best paper award.

# AXIAL CODING

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

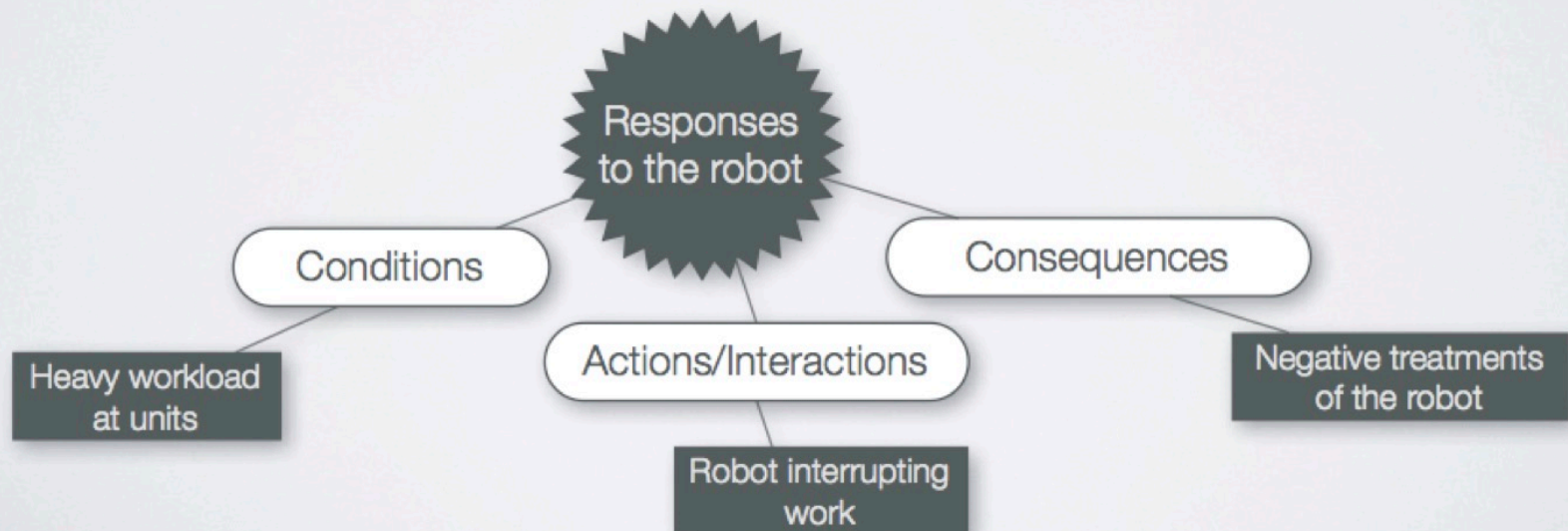




# SELECTIVE CODING

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

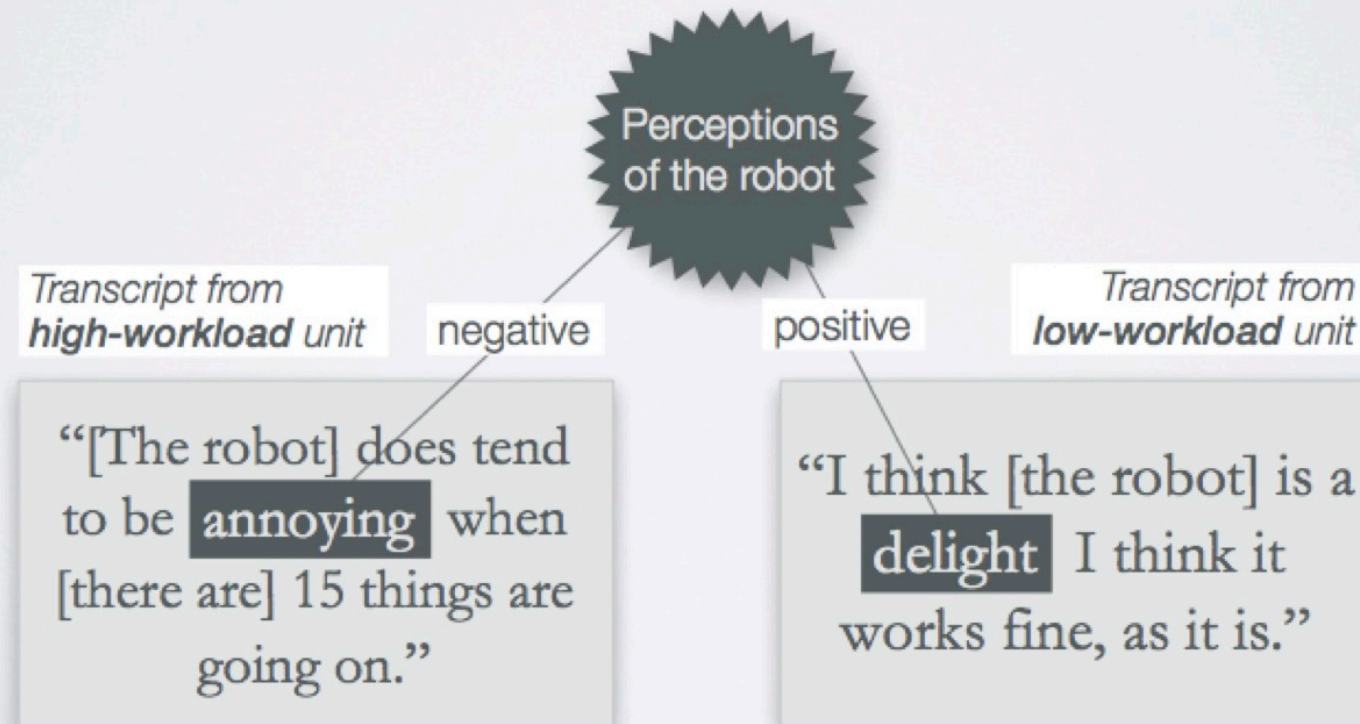
Diagramming or tables could be used to build relational models





# COMPARATIVE ANALYSIS

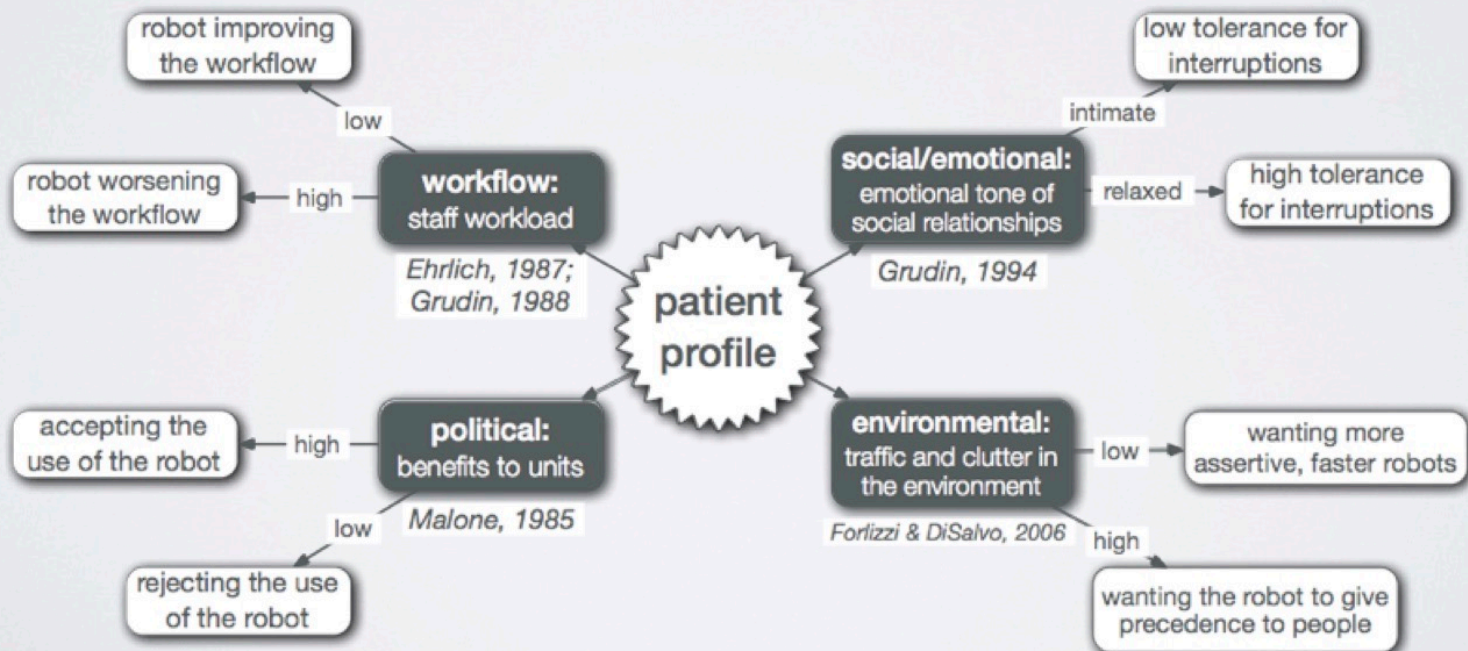
Compare the central phenomenon across several dimensions to understand how it is affected by social, physical, or organizational structures



# THEORY BUILDING

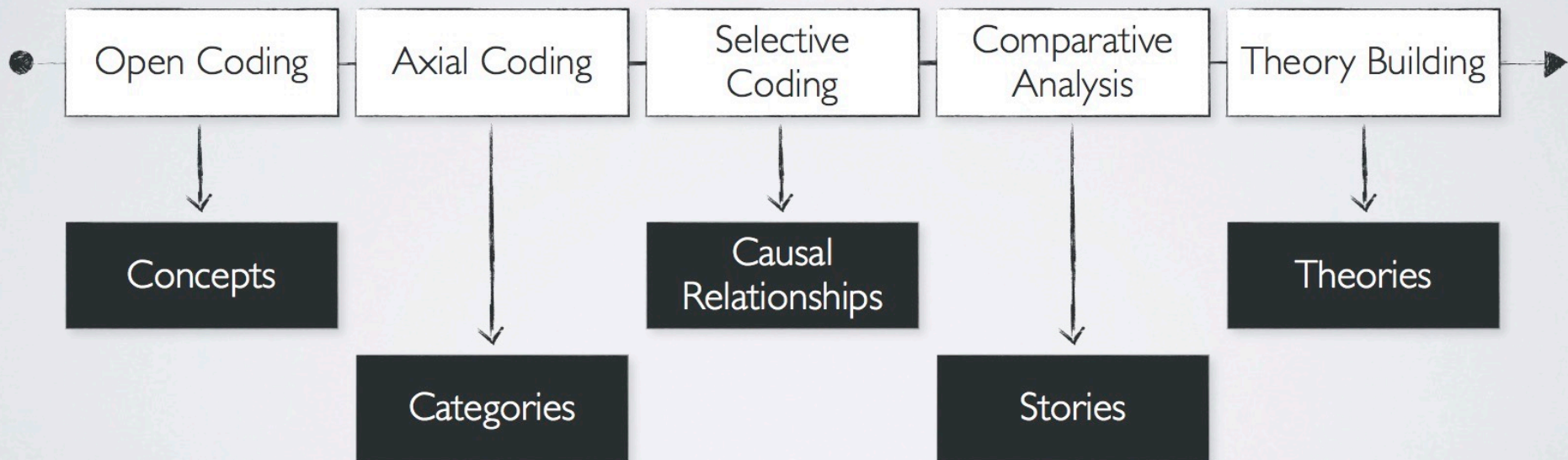
Build a final theoretical model based on the results of the comparative analysis

“Embed” existing theory in this model





# RECAP OF PROCESS



# Thematic Analysis

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

# Your turn...

Share your notes with a new peer.  
Code them with thematic analysis.

# Thematic Analysis

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# Practice Problem

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Use these words to fill in the sentences below.

grouping      descriptive labels/themes  
coding      theory

Affinity diagrams involves \_\_\_\_\_ and gives \_\_\_\_\_.

Grounded theory method involves \_\_\_\_\_ and gives \_\_\_\_\_.

Thematic analysis involves \_\_\_\_\_ and gives \_\_\_\_\_.