# CODING & ANALYSIS

CODING and ANALYSIS in qualitative research methods

Part II

(Dur: 1.5 hr)

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# RESEARCH PROCESS

| Research Proposal | → | Lit Review | → | Data collection | → | Data analysis | → | Report writing |
|---|---|---|---|---|---|---|---|---|

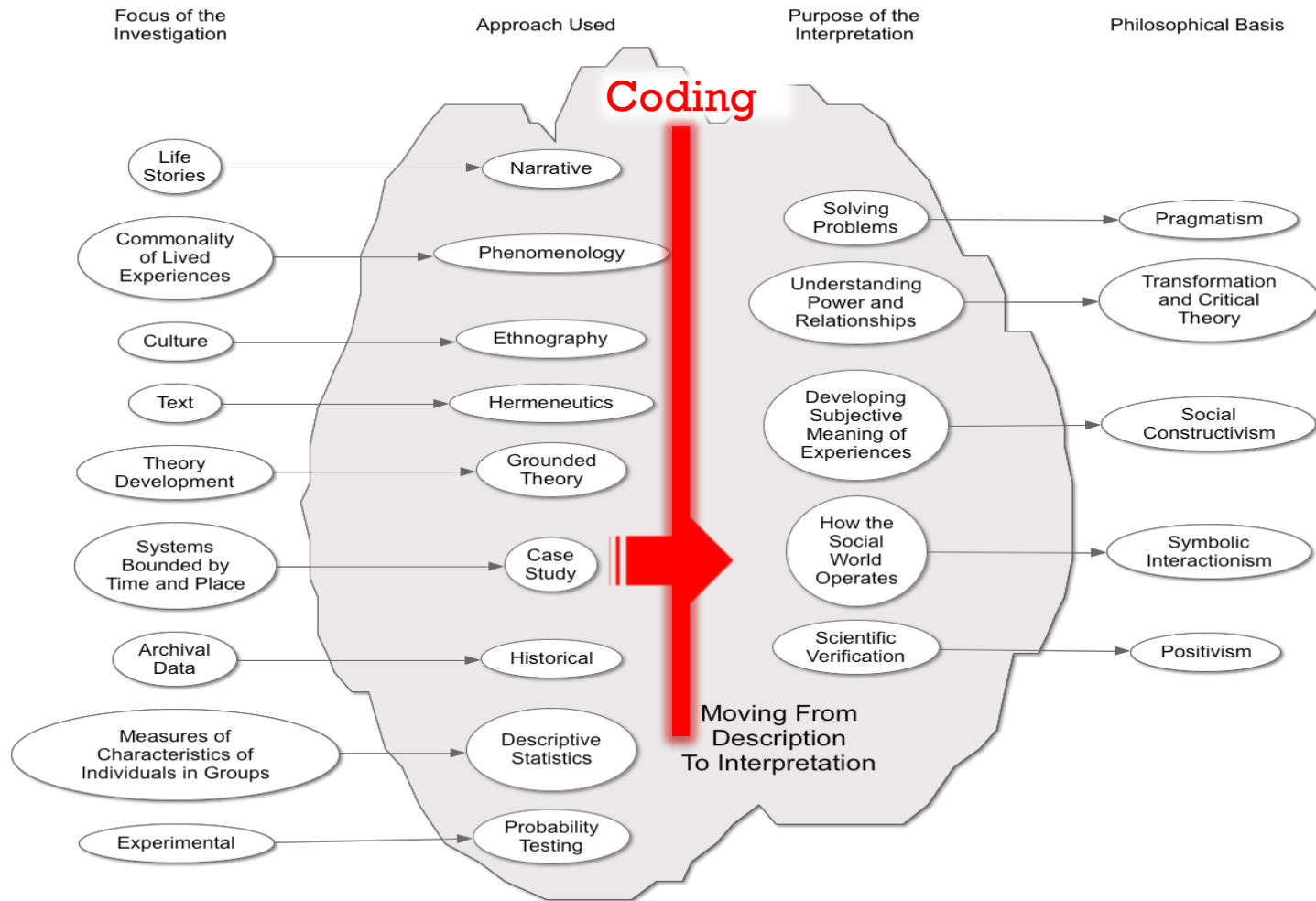| Formulate research question and scope | Define the field, cite key theorists and works of other scholars | Field works | Coding and analysis | Writing and publications |

# DATA ANALYSIS

Data are reduced to codes

Codes are grouped as categories

Themes emerge from categories

Theorize the themes

Situate the theories and themes with the broader discourse?

Corpus Data (transcripts of interviews, field notes, audio and view files, emails, photos, newspaper, movie, diaries, posters, etc)

Codes

Codes

Codes

Codes

Codes

Codes

Categories

Categories

Categories

Categories

Categories

Themes

Themes

Themes

Theories

Discourse

# CODE AND CODING

Qualitative research methodology encompasses several methods for data analysis. However, there is one commonality: coding.

**A code** is a **word or short phrase** that symbolically **assigns a summative, salient, essence-capturing, and/or evocative attribute** for a portion of language-based or visual data (Saldaña, 2013)

**Coding** is the activity of **labeling**, or **indexing** and **categorizing the text** in order to establish a framework of the thematic ideas about it (Gibbs, 2007)

# SEMANTIC & LATENT MEANINGS

- **Semantic meaning** is the <u>explicit or surface meanings</u> of a word, phrase or the data corpus
- **Latent meaning** is the <u>below-the-surface meaning</u> – the *underlying* ideas, assumptions, conceptualizations
- E.g.
  - A moon is a moon (semantic)
  - A moon is also night, a symbol of constant change, and, in some culture, symbol of femininity (latent)

OH SWEAR NOT BY THE MOON
TH INCONSTANT MOON!
SHAKESPEARE

# AN EXAMPLE...

1. *"There are those who are simply not familiar with*
2. *technology - there are those of us who are just*
3. *not comfortable with it – and are just not going to use it."*

Codes are:

- People are just not comfortable          Semantic

- Apprehension/opposition to technology - Latent

# TWO CYCLES OF CODING

- **First cycle:**
  - Close look at the data corpus and code relevant words and phrases that make sense to your study.
  - Saldaña (2013) lists 23 possible first cycle coding methods in 7 categories.
  - Not **all** are required **all the time**

- **Second cycle:**
  - Advanced ways of organizing and analyzing codes and the data

# GENERIC CODING METHODS SALDAÑA (2013)

- Saldana (2013) recommends five first-cycle coding methods. I suggest the sixth: *process coding*.
  1. Attribute coding
  2. Structural coding
  3. In Vivo coding
  4. Descriptive coding
  5. *Process coding*
  6. Initial coding

- Saldana (2013) recommends one second-cycle coding: Pattern coding

- From my experience, depending on RQ, Axial Coding and Selective Coding also important.

# ATTRIBUTE CODING

Essential information about demographic of the participant. *(Basically, who is talking?)*

*"There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it."*

Participant A, 47, male, 15 years a teacher

# STRUCTURAL CODING

Phrase representing a topic of enquiry to a segment of data relating to specific research question used to frame the interview

*(RQ:What is your view on introducing technology in classrooms?)*
*"There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it."*

Code:
Perspectives on technology in classroom

# IN-VIVO CODING

aka Verbatim coding or literal coding. Labels respondents' words *(What are his/her exact words?)*

*"There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it."*

**Code:**

"simply not familiar"
"Just not comfortable"
"not going to us"

# DESCRIPTIVE CODING

Word(s) or short phrase that summarizes a passage (aka topic coding, it answers the question: *what is going on here?*)

"*There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it* – *and are just not going to use it.*"

Codes:
- Lack of IT skills
- Discomfort
- Resistance

Characteristics:
- Nouns (Inventory of topics)

# PROCESS CODING
W: *what is going on here?)*

"*There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it* – *and are just not going to use it.*"

Codes:
- IDENTIFYING lack of skills/training
- LABELLING: "just not comfortable
- BRINGING in others to form solidarity
- EXPRESSING total refusal

# INITIAL CODING

a.k.a. open coding, this is where the main analysis starts. It is not a method like the earlier ones. Rather depending on the research Q, it includes other methods - generally In-Vivo and/or Process coding

*"There are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it."*

Codes:
- STATING lack of skill
- IDENTIFYING the need for training
- LABELLING: "just not comfortable"
- EXPRESSING total refusal

# CODING SHEET

- Attribute coding
- Structural coding:
- Descriptive coding:
- Initial coding:
  - In-Vivo coding
  - Process coding:

| | Codes | Data | Patterns/Categories /Themes |
|---|---|---|---|
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15 | • Perspectives on technology in classroom<br><br>• Lack of IT skills<br>• Discomfort<br>• Resistance<br>• STATING lack of skills<br>• IDENTIFYING need for training<br>• LABELLING: "just not comfortable<br>• BRINGING in others to form solidarity<br>• EXPRESSING total refusal | Participant A, 47, male, 15 years a teacher<br><br>**I:** What are your views on bringing new technology to help teachers in classrooms?<br><br>**R:**<br>The are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it. | |

# GENERIC CODING PROCESS

SALDAÑA (2013)

- We have seen five first-cycle coding methods. Plus the sixth: *process coding*.

  1. Attribute coding
  2. Structural coding
  3. In Vivo coding
  4. Descriptive coding
  5. *Process coding*
  6. Initial coding

- Later we will look at second cycle coding and Thematic Analysis

Semantics meanings

↓

Latent meanings

# ANALYTIC MEMO (OR SIMPLY, MEMOS)

- As you get into your flow, ideas and questions will arise, connections will be made. <u>Write them all down, immediately!</u>. This is called memo writing.
- "ah-ha" moment can hit you anywhere. Keep a notebook/pen.

Coding memos are:
- "the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding" (Glaser, 1978, p. 83).
- "the narrated records of a theorist's analytical conversations with him/herself about the research data" (Lempert, 2007, p. 247).

# ANALYTIC MEMO (WHAT TO & HOW TO)

You should reflect and write on:

- How **you personally relate** to the person/phenomenon

- How does the **codes link to your research** question

- The **code choices** and new choices for words

- Emerging **patterns, categories, themes**

- Emerging **theories and concepts** or how it is relating to the theoretical framework

- Problems and **challenges with the study**

- Personal and **ethical dilemma**

- **Future directions** of the study

- How the **final report** looks like

# MEMO EXAMPLE

## Memo:

Technology is omnipresent these days. While it has entered the modern work place, there seems to be a section of professionals who are still apprehensive about its use. The teaching community, for instance is still pushing back. In the words of a 47-year old teacher, some are "just not comfortable" with bringing into their classrooms as teaching aid. *(But how prevalent is this resistance? What are the factors that contribute to such refusals? Is it gendered? Does age play a role?)*
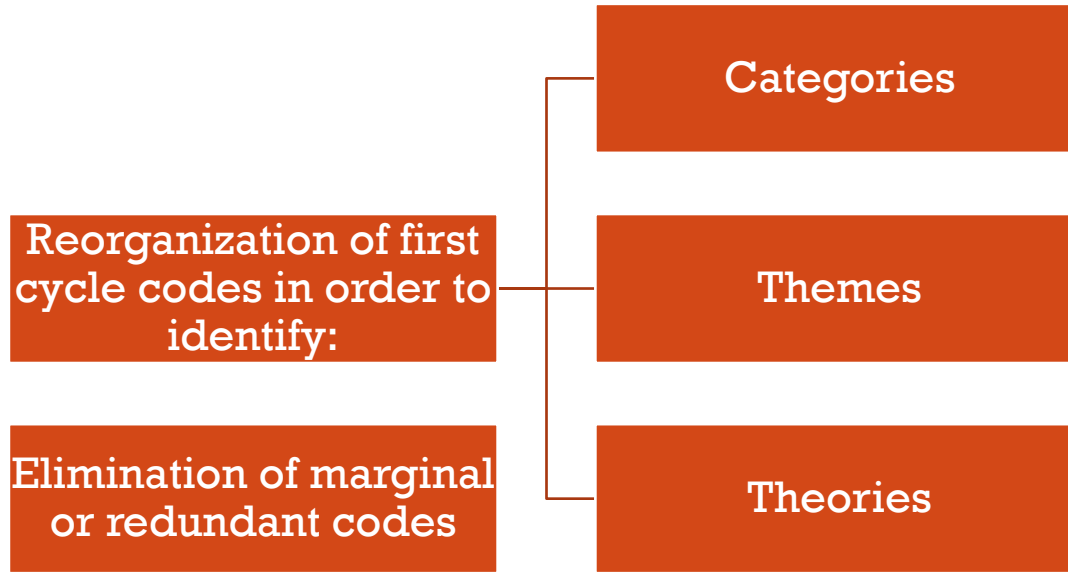
## Memo:

Although humanity is in romance with technology, there are still people and professionals who are not ready to commit. A finding from this study show that some members of teaching community are "just not comfortable" to introducing into their classrooms. *(But is this general phenomenon? Is there a difference be men and women? Or between young and old? What are the factors that contribute to such refusals?)*
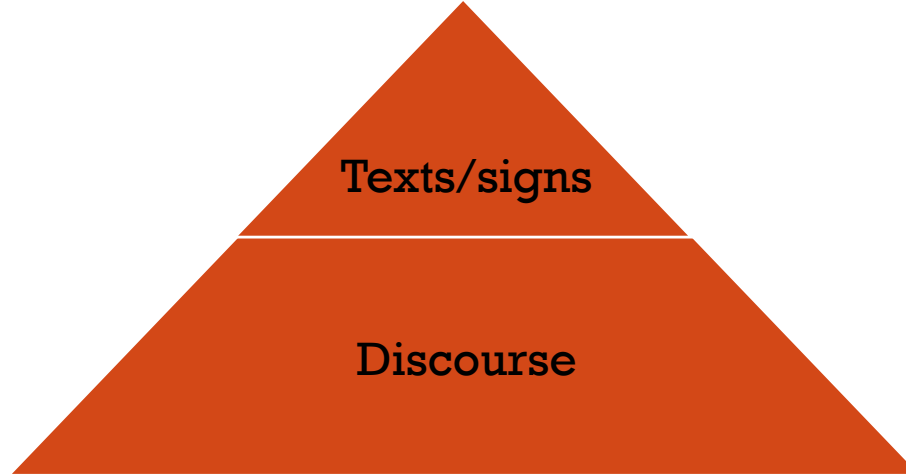
# SECOND CYCLE CODING (SALDANA, 2013)

Reorganization of first cycle codes in order to identify:

Elimination of marginal or redundant codes

Categories

Themes

Theories

# DISCOURSE



Texts/signs

Discourse

Discourse is "an entity of sequences, of signs, in that they are enouncements (*énoncés*)", statements in conversation

Foucault, 1969

# FORMING CATEGORIES & THEMES

- **Categories.** Codes with similar meanings lumped together.
- **Categorization** is where investigators see a pattern in codes and attempt to group them into meaningful units.
- **Theme**

  A theme **captures something important about the data** in relation to the research question, and represents some level of ***patterned responses or meanings*** within the data set (Braun & Clarke, 2012)

  To qualify as a theme, the categories should patterns that are relevant to the research question. This is important.

# CODING FOR CATEGORIES/THEMES

- Coding for categories and patterns is called **Pattern coding** (Saldana, 2013) and this step allows several codes to be lumped into smaller numbers
- Pattern coding then moves into looking for themes, which is a patterned responses.
- Eventually pattern coding leads to the formation of theoretical constructs and abstraction of the concepts

# CODING SHEET

- Attribute coding
- Structural coding:
- Descriptive coding:
- Initial coding:
  - In-Vivo coding
  - Process coding:

| | Codes | Data | Patterns/Categories/Themes |
|---|---|---|---|
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15 | • Perspectives on technology in classroom<br><br>• Lack of IT skills<br>• Discomfort<br>• Resistance<br>• STATING lack of skills<br>• IDENTIFYING need for training<br>• LABELLING: "just not comfortable<br>• BRINGING in others to form solidarity<br>• EXPRESSING total refusal | Participant A, 47, male, 15 years a teacher<br><br>**I:** What are your views on bringing new technology to help teachers in classrooms?<br><br>**R:**<br>The are those who are simply not familiar with technology - there are those of us who are just not comfortable with it – and are just not going to use it. | Need for more training and familiarization<br><br>Resistance to change<br><br>Fear of technology among older educators |

# WRITE-UP

Technology is omnipresent these days. While it has entered the modern work place, there are still a section of professionals who are apprehensive about it. The teaching community, for instance, is still pushing back. In the words of a 47-year old teacher, some are "just not comfortable" with bringing into their classrooms as teaching aid. (Evidence-based research outcome)

Older educators are in general less comfortable with use of technology in classroom (Theory)

This research highlights the wider discourse on the introduction of technology into the classrooms where a generation of teachers with little or no IT skills must negotiate with the changing reality. (Discourse)
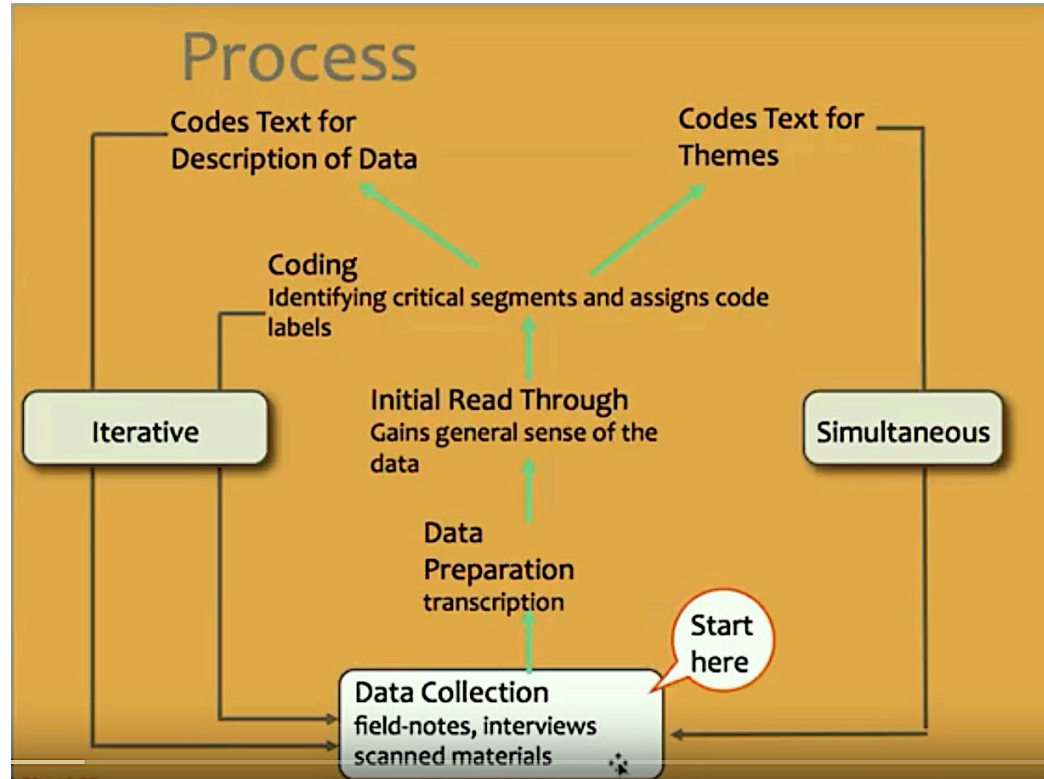
# FINAL TIPS ON CODING

- Read everything and make notes of any potential themes that come to mind

- Read until a possible theme appears and then follow it through all of the data **– data saturation**

- Code every sentence or piece of sentence and then recode into categories

- Try to pick a single coding strategy and follow it through all the data

# THE REAL WORLD

# LET'S DO A HANDS-ON EXERCISE

- 60 minutes
  - **15 min – Q&A**
  - 30 min - Group exercise:

    Students will divide in groups of three and will discuss for 30 minutes
  - 15 min – Summary

# CORPUS DATA #1

| Line | Codes | Corpus data | Categories & Themes |
|---|---|---|---|
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 | | I feel so proud when I watch teams that are not even Bhutanese play – like my favorite team Manchester City – like a win for them is so thrilled.<br><br>I am over the moon.<br><br>And when you have something like, I know many Bhutanese will echo my sentiments, to see him on TV, to watch and to know that it is a Bhutanese guy and you hear Bhutan! Bhutan!<br><br>You know? Like, "the footballer from Bhutan" and all of that.<br><br>And I think it is matter of pride to hear your country's name being said and Chencho is the one who's representing.<br><br>And he represents the country so well. And he is a good footballer.<br><br>END OF INTERVIEW | |

# WRITING THE REPORT

Football is widely acknowledged as of the world's most popular single sports (*citation needed*) and major leagues such as the English Premiere leagues boasts of fan base not only in the UK but around the world (*citation needed*). Consequently, seeing one's favorite club win can make one happy.

It is also widely accepted that sports can bring nations and people together (citation needed). Furthermore, it seems that there is no greater joy than to see a fellow countryman doing well in the sports in another country. And to hear your country's name being uttered time and again takes the pride to ever a higher level as our participant A puts it: it is matter of pride to hear your country's name being said.

# CORPUS DATA #2

| Line | Codes | Corpus data | Categories & Themes |
|------|-------|-------------|---------------------|
| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 | | On a dark desert highway, cool wind in my hair<br><br>Warm smell of colitas, rising up through the air<br><br>Up ahead in the distance, I saw a shimmering light<br><br>My head grew heavy and my sight grew dim<br><br>I had to stop for the night<br><br>There she stood in the doorway<br><br>I heard the mission bell<br><br>And I was thinking to myself<br><br>"This could be Heaven or this could be Hell"<br><br>Then she lit up a candle and she showed me the way<br><br>There were voices down the corridor<br><br>I thought I heard them say | |

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