HCI and Design

Qualitative Analysis

So, you have collected data from all the qualitative research you have been doing.

Contextual inquiries, interviews, surveys, observations…

NOW WHAT?

Data analysis
- An attempt by the researcher to summarize the data.

Data Interpretation
- An attempt to derive meaning from the data

Inductive Content Analysis

There are many different ways of analyzing the data collected from qualitative methods.

The one we'll be looking at is **inductive analysis.**

- In general inductive research is theory-generating, whilst deductive research is theory-testing.

With inductive analysis, you generate themes and use them to create theories/narratives and draw conclusions

- e.g., War victims express hatred towards soldiers and/or relief that the war is over

It's also called thematic analysis.

How do you come up with themes?

- Qualitative coding is the process of going through the data and coming up with categories and meanings (themes, ideas, etc.)

- Qualitative coding lets you make sense of and analyze your data. How?
  - Reduces the data to a manageable form
  - Allows for systematic retrieval at a later stage for further comparison and analysis.
  - Makes it easier to identify any patterns that deserve attention or require further investigation.
  - Can help you generate a general theory.

Sources of codes

A priori codes i.e., Come up codes with before you analyze

- Previous research
- Previous theory
- Research question
- Your intuition of the data or setting

Grounded codes

- “In vivo”: Let codes emerge from the data
- Suspend your ideas about the phenomenon and let your data determine your thinking

Code Names

Codes are given meaningful names that are applied to all instances of similar content.

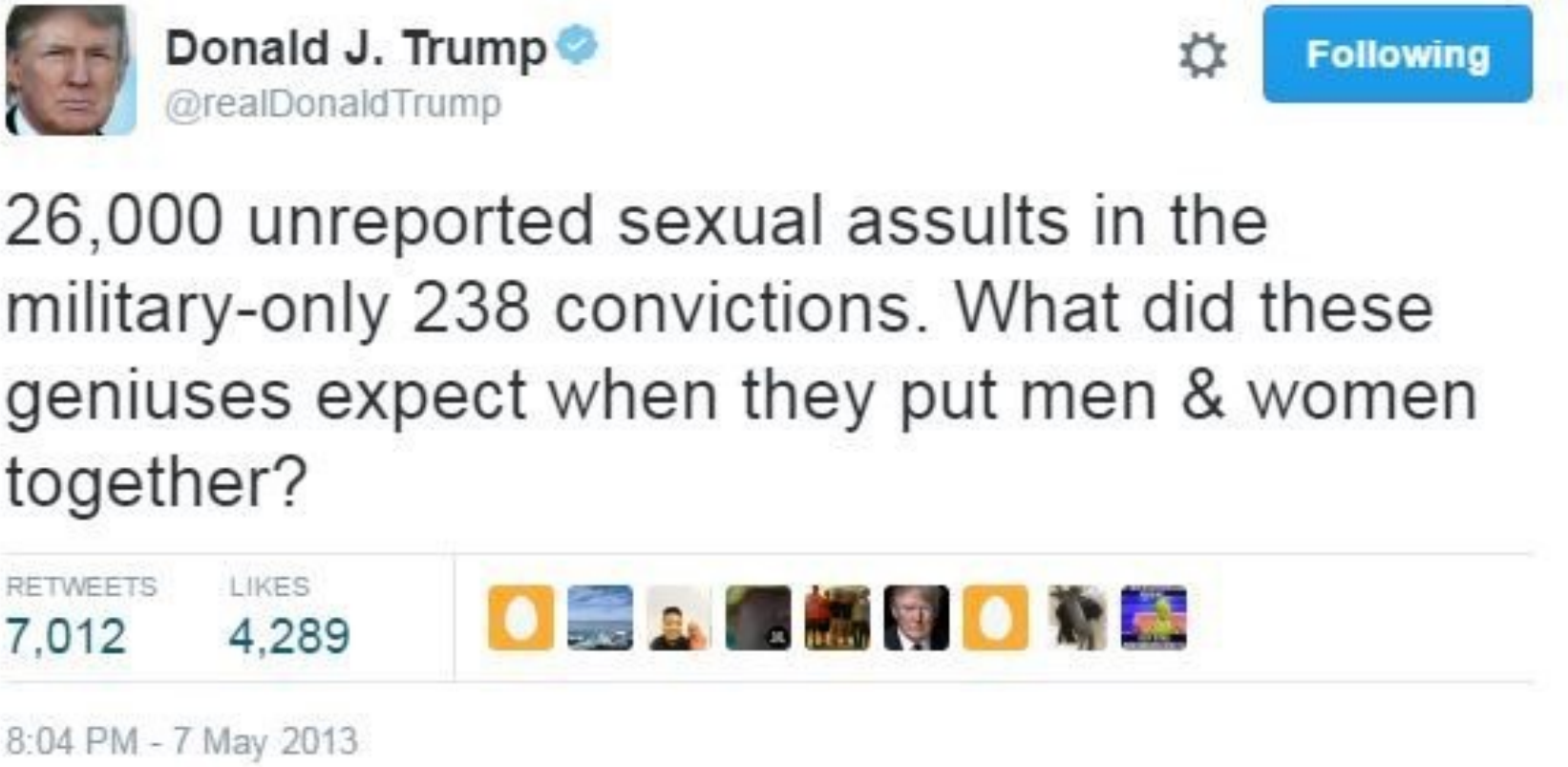
- Strings of text may contain more than one code.
- When new content is discovered, a new code is created to apply to it and other similar content.

As you do your analysis:

- Codes may evolve
- The number of codes may grow as more topics or themes become apparent.

Therefore, generate and maintain a list of codes (i.e., codebook) to help to identify the content contained in the codes and the data set.

Example


Donald J. Trump
@realDonaldTrump
Following
26,000 unreported sexual assults in the military-only 238 convictions. What did these geniuses expect when they put men & women together?
RETWEETS
7,012
LIKES
4,289
8:04 PM - 7 May 2013

Example

“. . . an abusive partner kicked in our front door and wound up in the lobby of our [building] by tracking her phone . . . it was some secondary application that [the abuser] had put on it and knew exactly where she was. He literally kicked our front door open. We called the police . . . it was scary."

Keep in mind: Credibility

Is the data based on a participant's own observation, or hearsay?

Is there corroboration by other participants?

In what circumstances was an observation made or reported?

How reliable are the participants providing the data?

What motivations might have influenced a participant's report?

What biases might have influenced how an observation was made or reported?

Remember: Interpretation also depends on the perspective of the researcher(s)

Coding

Codes may be based on:

- Actions, behaviors
- Themes, topics
- Ideas, concepts
- Terms, phrases
- Keywords

Code only relevant data (Not all data must be coded)

Types of Codes Examples

Behaviors, specific acts	Being dumbfounded, Bragging
Specific events, stories (short or once)	First time visiting New York.
Activities (common or longer duration)	Playing baseball, eating out
Strategies, practice, or tactics	Doing extra homework to get an A+
States – general conditions/feeling	Being angry about Assignment 1
Relationships or interaction	I want to beat the other team
Conditions or constraints	I can't use Facebook on the subway
Consequences	Getting hacked because you had a weak password

Coding process

Follow an iterative process:

1. Read through data multiple times. Become familiar with the data through reading data and transcripts, listening to recordings, etc.
2. Categorize and code pieces of data
3. Group the codes into themes
4. Reduce overlap and redundancy
5. Repeat, refine, repeat, refine…

Categorize and Code

Answer these four questions

- What is important in the data?
- Why is it important?
- What can be learned from it?
- So what?

Example:
". . . especially if they're separated and having custody issues, the abuser will give a cellphone to one of the kids. And the kid is so excited, they get a cellphone, but [the abuser] uses it as a way of getting in and figuring out what's going on in the home."

How to make coding manageable

Make copies of the original data
- Why?

Read through all of the data.
- Attach working labels to blocks of text

Cut and paste blocks of text onto index cards.

Group cards that have similar labels together

Revisit piles of cards to see if clusters still hold together.

Re-cluster into different piles. etc.

Identifying themes

Generate broader themes by linking instances of codes with other instances/codes.

Begin with big picture and list “themes” that emerge.

- Events/codes that keep repeating themselves

First round of coding: 30-40 categories

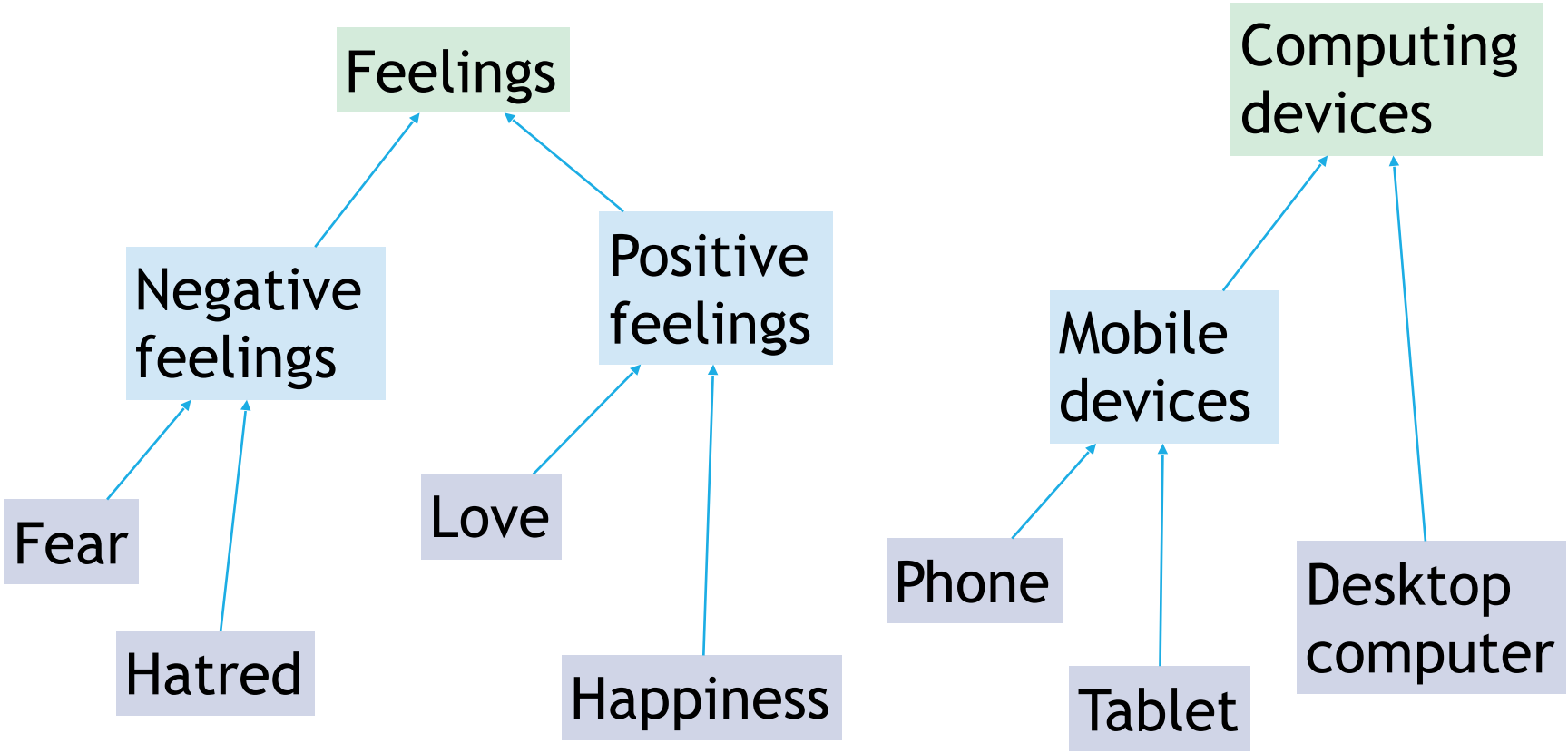
Second round of coding: 15-20 categories

- Remove redundancy
- Reduce overlap

Eventual target: 3-8 main categories/themes

- Can have sub-categories

Identifying themes



Create a narrative

Once you have your ~3-8 main themes, the themes are formed into a narrative about the data.

Create a story that best represents your data

- "Our participants expressed mixed feelings about deleting their Facebook accounts. For example…."
- You can't include every detail!

For product design, create "user stories" that describe the key concerns/actions/feelings for each main category of user.

- Often several important categories of users.

We will learn more about user stories, personas, user journeys, and how to translate them into designs in upcoming classes.

Summary of Qualitative Analysis

1. Initial read through of the data (many pages of text)
2. Identify specific segments of information (many segments of text)
3. Label the segments to create categories (30-40 codes)
4. Reduce overlap and redundancy among categories (15-20 codes)
5. Create a model incorporating the most important categories (3-8 categories, with sub-categories)
6. Generate a narrative/user stories from your most important codes/themes

Let's practice!

You will practice coding a short interview transcript.
Work alone but you can discuss with your classmates.

1. Read through the transcript at least once without doing anything!
2. Read through again and label with codes. Keep track of your codes in a list
3. Go through it again and reduce redundancy/overlap.
4. Keep going until you have 3-8 main themes (with sub-categories).
5. Write 2-3 paragraphs describing the main takeaways from the interview that came out in your analysis.

Resources

Transcript:

http://learntech.uwe.ac.uk/da/Default.aspx?pageid=1414

Suggested Interpretation:

http://learntech.uwe.ac.uk/da/suggestedinterpretationofexample3.aspx