

CSC3031 Research and Project Skills: Qualitative Data Analysis

Simon Bowen

Announcements

Join at
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- Classes/guest speakers update:
 - Thu 17th, “Hacking Alexa for Research” Tom Feltwell
 - Fri 18th, Controlling Your Project (John and Simon)
 - Thu 24th, “JigsAudio, Slow Tech for Public Consultations” Alexander Wilson
 - Fri 25th, GHD, Edmund Bennet
- Canvas discussion posts – peer review, future class topics
- Preparing for Assessment Centres, 2 hour session, Wed 9th March?
- [Tutorial slots](#): Mon, Tue, Thu 16:30-17:30, Fri 13:00-14:00
- [CSC3031 FAQs](#)

Aims

- What qualitative data analysis is useful for
- Thematic analysis, step by step
- Useful tools & tips.

‘Quant’ or ‘Qual’?

Quantitative

- Hypotheses
- Numerical data
- Consensus, norms and generalisability
- Values subjectivity

Qualitative

- Research questions
- Words as data
- Local meaning, patterns, divergence & difference
- Values subjectivity

Subjectivity is acceptable in qualitative research,
BUT the research must still be **systematic**.

Systematic how?

- More than a summary or 'averaging' of data
- Using recognised methods
- Reporting on how methods used and findings derived
- So you can make claims from your data
- Could another qualitative researcher follow your work? Could they appreciate where your findings come from?

Where might you use qualitative methods?

- Evaluation studies
- Improve or extend prototypes
- Understand the 'user' environment
- Understand a 'user group'
- Analyse the language people use to describe technology

Research questions like:

- How do patients **perceive** doctors in a hospital setting?
- What are young women's **experiences** on dating sites?
- What are non-experts' **ideas and opinions** about climate change?
- How is gender **constructed** in high school history teaching?

Epistemology (briefly)

Positivism:

- Empiricism
- Scientific methods
- There is a 'true knowledge'

E.g. to study behaviour of sub-atomic particles

Constructionism:

- How 'reality' is constructed
- Knowledge of something is product of how we come to understand it
- Rejects notion of 'truth'

E.g to study human behaviour

Qualitative Sensibility

- Qualitative research is about **people** (including the researcher)
 - our thoughts and feelings, experiences, values, opinions...
- From considering a singular universal reality to subjective, multiple and socially-constructed realities.
- Focus on process and meaning
- Critical questioning and reflexivity

Meaning not numbers
No single answer
Context is important

Data for qualitative research

Interviews:

- Semi-structured
- In person or online
- Good for studying experiences and practices

Focus Groups (and Design Workshops):

- Exploring a range of views
- Collective sense making
- Exploring design ideas

Data for qualitative research


Textual data

- Surveys
- Researcher-directed diaries
- Interviews
- Focus groups/design workshops
- Online sources, including social media

Observational data:

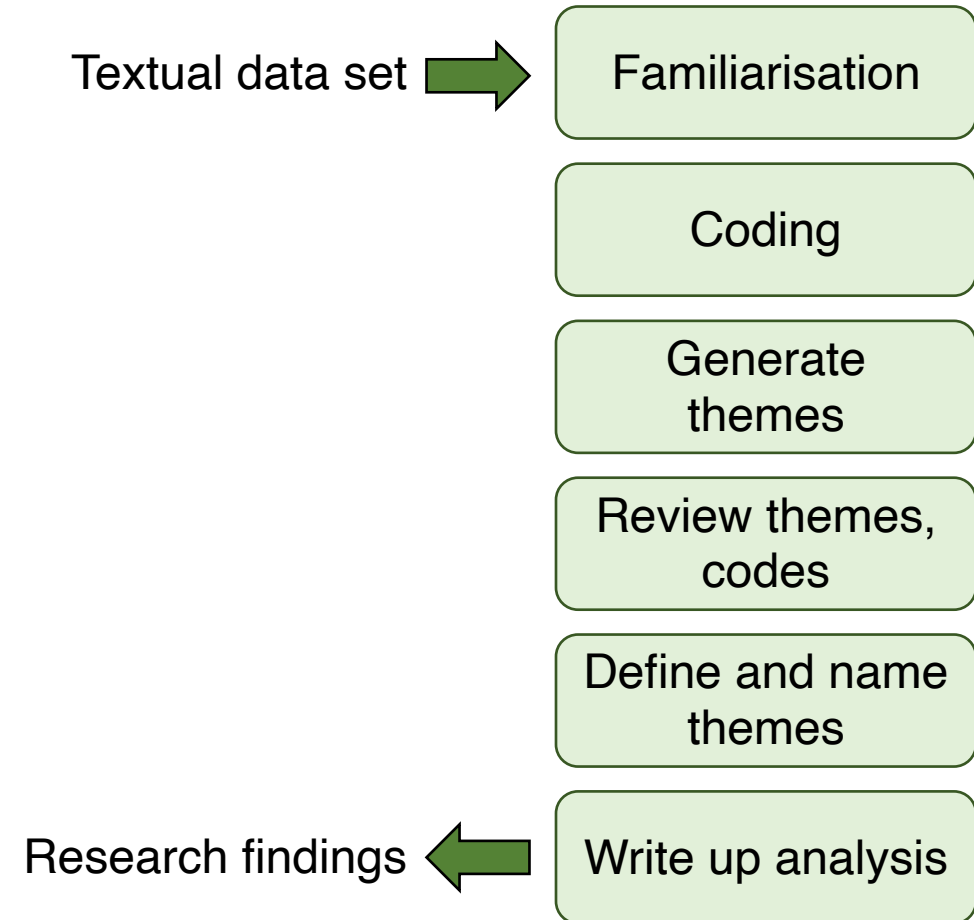
- Field notes
- Ethnography
- Ethnomethodology
- Descriptive notes, transcriptions of video recordings

Methods for analysing qualitative data

- Thematic Analysis  We'll look at this as it is well suited to interviews.
- Discourse Analysis
- Content Analysis
- Conversation Analysis
- Interpretative Phenomenological Analysis
- Grounded Theory

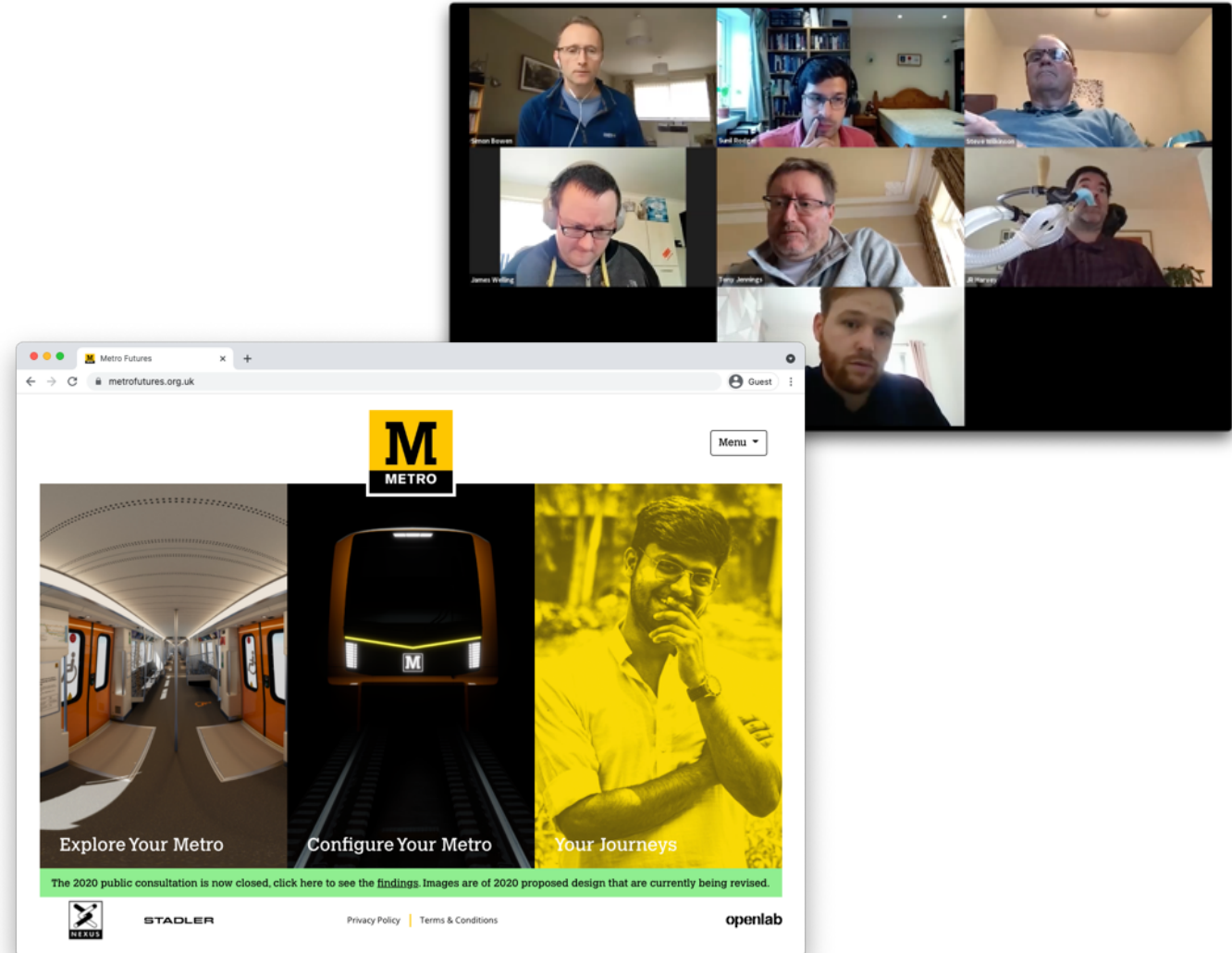
Thematic Analysis

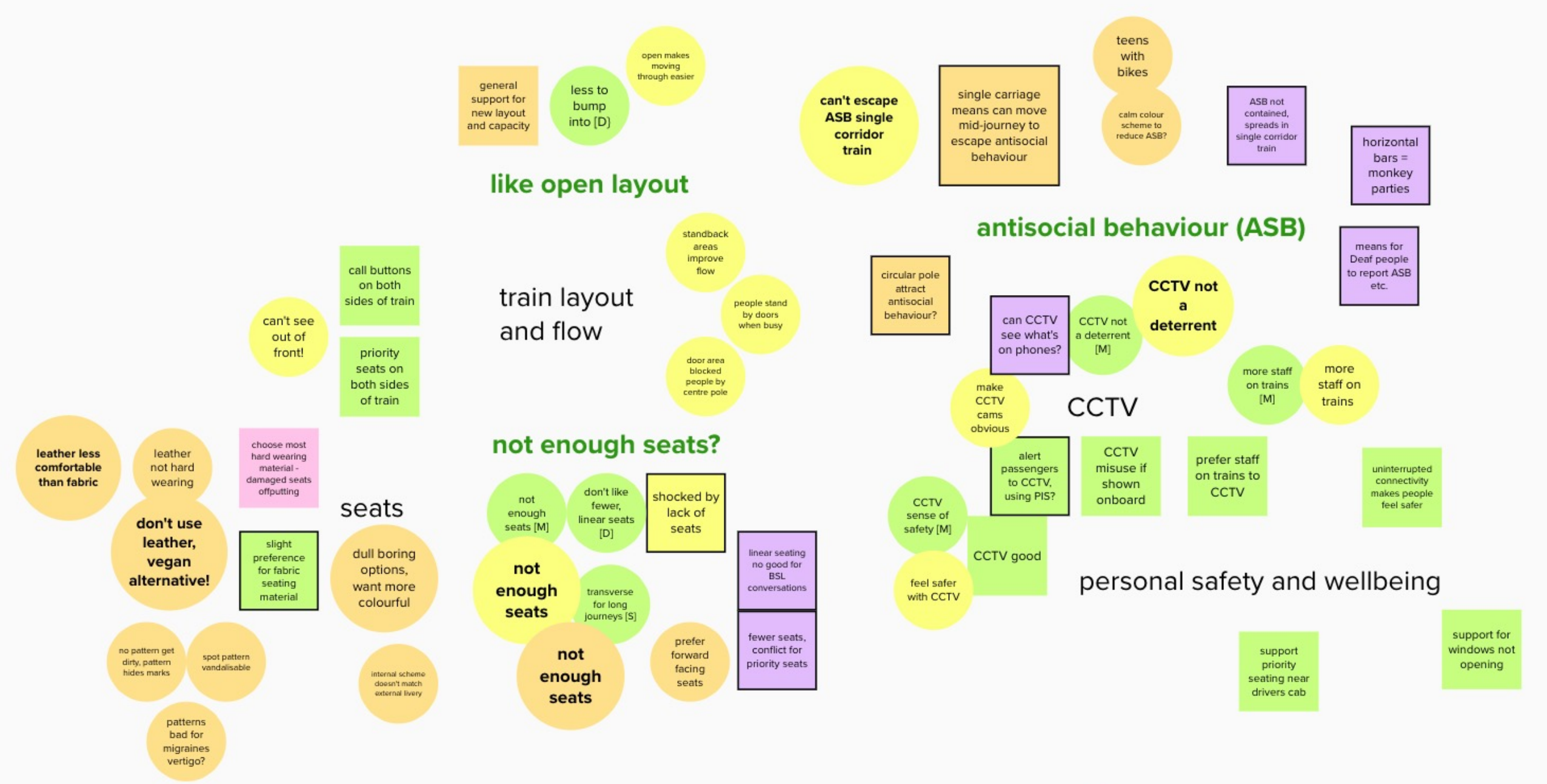
- Searching for patterns –
Themes - across a
textual data set



Example: Metro Futures 2020

- 10 x 1-hour+ Zoom workshops
- 5145 text comments on the website





Familiarisation

- Transcribe your data
 - (or get Zoom, Teams to do it)
- Watching videos, reading transcripts
- Making notes (drawings?)
- Do your own transcriptions?
 - In enough detail for your project

Familiarisation

Coding

Generate
themes

Review themes,
codes

Define and name
themes

Write up analysis

Coding

- Codes = very brief descriptions, labels
- Sections of text can have multiple codes
- These are your initial codes
(you can refine them later)
- Add codes until nothing new to describe
(‘saturated’)
- Example...

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P32W05: Yeah, I think the big symbols on the doors are a good I think it'd be easily spot as the train comes in to see which area you need to be in

P32W05: Yeah, and I like the external destinations on the sides. The information screens.

R01W05: Yes, these things here. Yeah.

P32W05: I was gonna say do you think they will flash between them, like the destination and maybe. Oh, that was a question I was going to raise later on them, will the new features like The new trains and like tell you whether it's the green or yellow line. Can I think that could be quite helpful. We're still don't seem to mention that anymore in the system.

R01W05: So, but that's a good point. It's good piece of feedback. We should say that, you know, these, these destination screens should be showing the line. Yeah.

P32W05: Yeah, because the colors. The colors only seem to be shown on the map. Now the way like if I was if it was more London Underground style would probably say like, this is the yellow line trained to South Hills, or whatever it is. And I think that could help people when they are unfamiliar to their system rather than other like search the map for the end points of the Lines. If the normal that train, especially on like the shed the central Commodore bit where there's the yellow and the green trains.

P32W05: To identify which train this

R02W05: You might even be confusing because isn't a front of the train or color as well. That's not but what could this the light on the front of the train isn't

R01W05: There isn't. So I think here.

R01W05: Let's do these lines, is it yellow.

P32W05: Now let's try that was like yellow or white.

R01W05: I think in another one of the images. I've seen it's either one color is either a white or yellow. If it's a front of the train on it's red. If it's the rear of the train.

P32W05: Was like a directional thing rather than

R01W05: Yes, a directional thing. Yeah, yeah.

Coding – Inductive or Deductive

Inductive:

- Allow the data to determine the codes/themes
- From the data, 'up'
- Looking for new patterns

Deductive:

- Approaching the data with framework for codes/themes – from theory, existing knowledge
- From the framework, 'down'
- Trying out existing patterns

You can do both. Inductive first, then second deductive coding.

1. P32W05: Yeah, I think the big symbols on the doors are a good I think it'd be easily spot as the train comes in to see which area you need to be in
2. P32W05: Yeah, and I like the external destinations on the sides. The information screens.
3. R01W05: Yes, these things here. Yeah.
4. P32W05: I was gonna say do you think they will flash between them, like the destination and maybe. Oh, that was a question I was going to raise later on them, will the new features like The new trains and like tell you whether it's the green or yellow line. Can I think that could be quite helpful. We're still don't seem to mention that anymore in the system.
5. R01W05: So, but that's a good point. It should be showing the line. Yeah.
6. P32W05: Yeah, because the colors. The Underground style would probably say people when they are unfamiliar to the that train, especially on like the shed that
7. P32W05: To identify which train this
8. R02W05: You might even be confusing the front of the train isn't
9. R01W05: There isn't. So I think here.
10. R01W05: Let's do these lines, is it yellow
11. P32W05: Now let's try that was like yellow or white.
12. R01W05: I think in another one of the images. I've seen it's either one color is either a white or yellow. If it's a front of the train on it's red. If it's the rear of the train.
13. P32W05: Was like a directional thing rather than
14. R01W05: Yes, a directional thing. Yeah, yeah.

Deductive coding of this data.

Topics for public consultation:

- Information displays
- Decals on trains
- Use of colour and contrast

know, these, these destination screens

the way like if I was if it was more London whatever it is. And I think that could help the end points of the Lines. If the normal and the green trains.

that's not but what could this the light on

Generate Themes

Look over the codes

- How might they be grouped?
- What patterns emerge?
- Label groups – these are your initial themes
- Diagrams, post-its, and software can be helpful
- Not all your codes might fit

Familiarisation

Coding

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Write up analysis



Review Themes, Codes

- Go back to your data
- Do the themes summarise it well enough?
- Is anything missing?
- Are there too many or too few themes?
 - More than 8? Fewer than 3?
 - Could you combine or split themes?
- Which are most representative? Which might be dropped?
- Check your codes.
 - You might need to add, rename, remove, move around.

Familiarisation

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Define and name themes

- Check your themes
- What do they communicate about the data?
- Do some aspects need defining?
- Do theme names represent this well enough?
- Do names characterise (good) or just categories (poor)?

Familiarisation

Coding

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themes

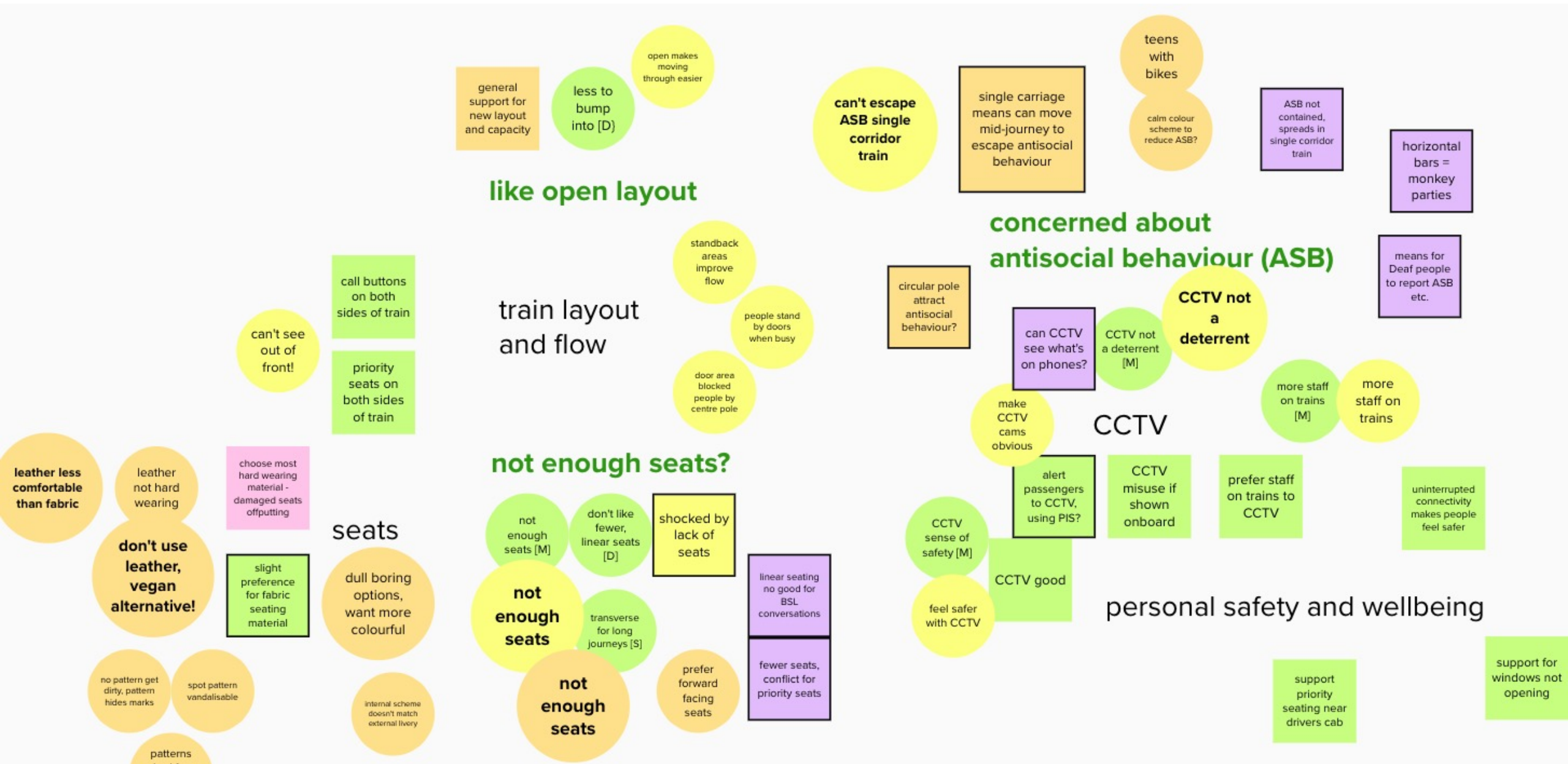
Review themes,
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Example Theme Names

- Seats
- Layout and flow
- CCTV
- Experts
- Colour
- Not enough seats?
- Like open layout
- Concerned about anti-social behaviour
- Distrust of experts
- Use contrasting colours



Write up analysis

Your themes and codes aren't your findings (yet), you need to explain them

- Introduce research question/topic
- Describe methodology – participants and recruitment, data captured, how thematic analysis conducted (inductive and/or deductive?)
- Results/findings – explain each theme in turn

Familiarisation

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Writing up themes

- Explain your theme
- Use descriptions of your codes to provide detail
- Use (some) quotes from your data to provide evidence
- You don't need to (shouldn't) give all your quotes with all their detail
- Appendices are your friend
- A (simple) theme/code map can help

Writing up a theme example

[Files\\Explore_SlidingStep](#)2 references coded, 2.79% coverage

Reference 1: 1.67% coverage

Really pleased to see this feature as I am a Carer for my disabled, wheelchair using son. Sometimes he finds it difficult and scary when getting on and off the metro because of the gap.

Reference 2: 1.12% coverage

Very good idea. When I was a small child my foot went down the gap and I really hurt my leg so I support this wholeheartedly :)

[Files\\Explore_WheelchairSpace](#)1 reference coded, 9.94% coverage

Reference 1: 9.94% coverage

I would suggest that from my experience of other systems that the floor area needs to be highlighted maybe with a red coloured floor.

[Files\\Explore_WideAisles](#)1 reference coded, 5.73% coverage

Reference 1: 5.73% coverage

And to fall over easier. If your balance is impaired this is only better if you can actually get a seat. My disability is unseen and will struggle to get a seat when it,Äôs quiet, this arrangement will prevent me using the metro when it,Äôs even modestly busy

Relating to Own and Others' Experiences

Participants commented in relation to their own experiences (24 references coded) using phrases such as “*in my experience*” and “*I find [that]*” and referring to specific memories in commenting on train features, for example “*when I was a small child my foot went down the gap and I really hurt my leg so I support this [sliding step] wholeheartedly.*”

Participants also alluded to personal experiences by characterizing themselves, for example a participant described themselves “*as a regular cyclist and train traveller*” to comment upon the appropriateness of a certain bicycle fixing design option.

Useful Tools

- Pen and paper:
 - Post-its
 - Flipcharts
 - Highlighter pens
- Online whiteboard tools:
 - [Mural](#)
 - [Miro](#)
 - [Google JamBoard](#)

Qualitative Analysis Software:

[Saturate web app](#)

- + Free, simple, quick to learn
- Limited functionality, glitchy, data management issues

[Nvivo](#)

- + Available on NCL PCs, advanced functions, 'industry standard,' control of where you store data
- A lot to learn...

References

- “[An Introduction to Qualitative Analysis](#)”, SAGE Research Methods videos (access login: institution > UK > Newcastle University)
- [Thematic Analysis in The SAGE Encyclopedia of Communication Research Methods](#)
- [How to Do Thematic Analysis | A Step-by-Step Guide & Examples](#)
- [How to Do a Thematic Analysis of User Interviews](#)
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. [\[online\]](#)
- Braun, Clarke, and Clarke, Victoria. Thematic Analysis : A Practical Guide. 2022. [Print](#).