

Qualitative Analysis

DATA 201: Thinking With Data
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What is Qualitative Analysis?

Why Qualitative Analysis?

What is?

- Analyze (initially) unquantifiable information
- Focus on how and why (sometimes what)

Why?

1. Identify & characterize previously undescribed behaviour or phenomena
2. Understand the rationale behind quantitative differences
3. Help form hypotheses for quantitative analysis

Sources of Qualitative Data

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- Places
- Actions
- Speech and Text
- Artifacts and Documents
- People's thoughts, feelings, emotions, judgements

Methods to Obtain Qualitative Data

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- Interviews
- Observation
- Diary Study
- Surveys (open-response)
- Focus Group
- Field Study

Recording Qualitative Data

Recording Qualitative Data

- Video Recording
- Audio Recording
- Interview
- Transcripts
- Photography
- Gathering/Sampling
- Documents or Artifacts
- Observation Field Notes



Experimental Setting



How to Make Sense of Qualitative Data?

Segmentation

Well, we were in it. Every one was caught in it and the small rain would not quiet it. "Good-night, Catherine," I said out loud. "I hope you sleep well. If it's too uncomfortable, darling, lie on the other side," I said. "I'll get you some cold water. In a little while it will be morning and then it won't be so bad. I'm sorry he makes you so uncomfortable. Try and go to sleep, sweet."

I was asleep all the time, she said. You've been talking in your sleep.

- Ernest Hemingway, *A Farewell to Arms*

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Segmentation

- *Its vanished trees, the trees that had made way for Gatsby's house, had once pandered in whispers to the last and greatest of all human dreams; for a transitory enchanted moment man must have held his breath in the presence of this continent, compelled into an aesthetic contemplation he neither understood nor desired, face to face for the last time in history with something commensurate to his capacity for wonder.*
- - F. Scott Fitzgerald, *The Great Gatsby*

Qualitative Coding

Open Coding

- “The story will emerge from the data”
- Grounded Theory
- Can be used to develop a structured coding schema

Structured Coding

- “I know what I’m looking for”
- Pre-defined codes, clearly defined rubric

Tips

- Check against collaborators' alternate perspectives
- Record what you observe, not what you interpret

Software

- Chronovis (OSX only) <http://chronoviz.com>
- NVivo <http://www.qsrinternational.com>
- Dedoose (web-based) <http://www.dedoose.com>
- Atlas.ti <http://atlasti.com>
- Saturate (web-based, text-only) <http://www.saturateapp.com>

Qualitative/Quantitative Analysis Draft Process Example

Draft Process

- Typical sports draft processes consist of both quantitative and qualitative data analysis
- Quantitatively -> player stats prior to draft at lower competition levels and younger age, as well as measurements from combine/health assessments
- Qualitatively -> scouting reports, watching tape, interviews

- What would be your arguments for quantitative?

- What would be your arguments for qualitative?

Draft Process

- One argument
 - Qualitative are replaceable by better 'analytics' as we introduce tools that can measure things scouts are currently 'observing'.
 - Tracking data and machine learning based analytics will provide better insight than tape in future
 - (Human brain is acting like flawed machine learning pattern algorithm)
 - Interviews have danger of bias of avoiding hiring those who are different without assessing anything about capability of athlete
 - <https://vidcruiter.com/video-interviewing/hiring-biases/#:~:text=Interviewer%20bias%20is%20when%20different,simply%20because%20of%20interviewer%20partiality.>

Draft Process

- Opposing argument
 - Once you decide to measure and reward something that is all you will get
 - (Goodhart's Law) <https://whyisthisinteresting.substack.com/p/why-is-this-interesting-the-goodharts>
 - Wells Fargo Cross-Selling <https://hbr.org/2019/09/dont-let-metrics-undermine-your-business>
 - A very messy process to convert some concepts to a stat and in doing so you may create a measurement bias.
 - Integrating a stat with high randomness or lack of control on the athletes side can destroy usefulness of combined statistic.
 - Adding NHL goalies save percentage to a summative stat for defensemen
- Human brain flexibility is an asset.

Onward to ... More Data Science or Computer Science Courses?

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