Mixed Methods

A Talk for Members of the EPIC Community
March 14, 2019
What we heard from you

- How can ethnography and qual coding in general meld with machine learning?
- How do you mix qual and quant sample logic?
- How do you order mixed methods?
- How do you get buy-in for ethnography?
Can you quantitatively analyze a story?

A case study of using life stories to understand how people become self-identified Nazis.
Mixed Methods Example

What causes someone to become a Nazi?

Transformed life stories written by Nazis into network “elements” (events; settings; people; etc)

Becoming a Nazi stories were more dense than Being a Nazi
Becoming versus Being

Becoming a Nazi
- Qualitatively:
  - Moving around a lot
  - Losing social connections
  - Disrupted connections to existing institutions like church and school
- Quantitatively:
  - Fewer and fewer connections to school, church, etc.
  - More and more interactions with other Nazis
  - More moving

Being a Nazi
- Qualitatively:
  - Simple, binary, unchanging
  - Lacking the dynamism of the Becoming phase
- Quantitatively:
  - Fewer and fewer instances of self-reflection
  - Activities less likely to be associated with sensemaking
The lesson?

Even stories can be transformed into quantitative measures, but to do so you must master two types of validity.
What do you mean by “mixed methods”?

- Some disagreement about what mixed methods really means

Quant can be "empirical"

**Quant**
- Empirically observed quantities
  - Device analytics
  - Satisfaction
  - NPS

**Qual**
- Perceived quantities
- Empirically observed qualities
  - Detailed observed descriptions of what happened
- Perceived qualities
  - Stories
  - Words used to describe experiences
## Qualitative vs. Quantitative

<table>
<thead>
<tr>
<th></th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role of theory in research</td>
<td>Deductive, testing of theory</td>
<td>Inductive, generating theory</td>
</tr>
<tr>
<td>Ontological orientation</td>
<td>Objectivism</td>
<td>Constructionism</td>
</tr>
<tr>
<td>Epistemological orientation</td>
<td>Natural science model</td>
<td>Interpretivism</td>
</tr>
</tbody>
</table>
So...what are “mixed methods” anyway?

**Ostensibly:**
- Mixing qualitative and quantitative research methods in the same study

**More fundamentally:**
- Mixing philosophical traditions
- Mixing very different kinds of data
- Mixing differently trained researchers
- Mixing types of outcomes and impacts
Quant researchers worry about...

I want to know what causes something else.

I really spend a lot of time wondering how to measure things.

I wonder how small patterns generalize to big patterns.

I want to make sure others can repeat my findings.
What do qual researchers worry about?

I want to see the world through the eyes of my respondents.

I want to describe the context in a lot of detail.

I want to show how social change occurs. I’m interested in how things come to be.

I really want my research approach to be flexible and able to change.
Different expectations

**Quant researchers...**
- Want predictive power
- Want closed hypotheses
- Expect research design to be locked down early
- Expect analysis to be fast
- Are comfortable reducing detail and potentially nuance
- Can be distrustful of low-n studies
- Tell great data summaries and create predictive data

**Qual researchers...**
- Want detail
- Want open-ended questions
- Expect to adjust research design
- Expect to spend time with participants
- Are comfortable with ambiguity
- Can be easily overwhelmed with too much data
- Tell great stories and create rich data
Ethnographers worry about...

- Why can’t I convince my clients and stakeholders to do ethnography?
- How does ethnography learn to count?
- How can ethnographers compete with big data or large n studies?
- What can ethnography do that no other method can?
On your own, write down an example of a project you remember that, *in retrospect*, was actually mixing philosophical traditions.

Now *thinking back*, what was the impact of mixing those two traditions?
Why mix methods?

- TIME DOES NOT PERMIT IN-DEPTH QUALITATIVE RESEARCH
- TIME DOES NOT PERMIT IN-DEPTH QUANTITATIVE RESEARCH
- NEGOTIATING ACCESS TO PARTICIPANTS IS CHALLENGING
- FINDING A LARGE QUANT DATA SET IS CHALLENGING
1. Triangulation: corroboration of earlier data
2. Complementarity: deepen or enhance other data
3. Development: use one method to inform and improve the other
4. Initiation: resolving earlier contradictory findings
5. Expansion: expanding the inquiry to ask different questions

The best of both worlds

- Detail *and* Predictive power
- Great stories *and* Precision
- Adaptability *and* Good planning
Ethnography’s secret super power

- Ethnographers tell stories with a beginning, a middle and an end.
- Stories are the most understandable, intelligible, and “sticky” types of data that exist.
Freitag’s pyramid
Becoming a Nazi pyramid

1. Moving around a lot
2. Got kicked out of school
3. Met some Nazis
4. Attended first rally
5. Became Party member
6. Being Party Member

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Ethnography finds why health policy failed

On-the-ground observation finds that breastfeeding policy failed because of the specific conditions of that location – even though the policy was found to work elsewhere.

Initiation

Hodgkin P, Britten J, Pill R.

Whereas the quantity of intervention delivered did not. In the three localities where breastfeeding rates declined, negative aspects of place including deprivation, unsuitable premises and geographical barriers to inter-professional communication; personnel resources including staff shortages, high workload and low morale; and organisational change predominated (the base model tiers). Managers focused on solving these problems rather than delivering the policy and evidence of progress to the higher model tiers was weak. In
Make sure you have a reason!

A significant minority of researchers had no apparent reason for mixing methods.

The graph shows the reasons researchers chose to mix methods:

- Complementarity: 28.9%
- No reason stated: 27.2%
- Expansion: 25.4%
- Development: 10.3%
- Triangulation: 7.8%
- Initiation: 0.4%


https://doi.org/10.1177/1468794106058877
### Considerations in designing a mixed methods study

<table>
<thead>
<tr>
<th>Logic of enquiry</th>
<th>Sequencing</th>
<th>Priority or dominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inductive: aimed at discovery</td>
<td>• Simultaneous</td>
<td>• Qualitative data: why, how</td>
</tr>
<tr>
<td>• Deductive: aimed at testing</td>
<td>• Sequential</td>
<td>• Quantitative data: how many</td>
</tr>
</tbody>
</table>

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Types of mixed method designs

Simultaneous

- Qual + Quant: interviews and analytics
- Quant + other Quant: survey and analytics
- Qual + other Qual: ethnography and focus groups

Sequential

- Qual → Quant: explore first then measure or test
- Quant → Qual: get lots of data then zero in on something specific for more detail
- Quant → Quant: general summary statistics then more specific variables
- Qual → Qual: explore and then explore one particular topic more deeply
Making ethnography quantitative

- Frequencies of coded data
- Surveys of participants
- “Nested” studies of large surveys with a sub-sample also observed ethnographically
- Non-nested studies: large surveys paired with a parallel (concurrent) ethnographic study
- Controversial to do anything more than frequencies
### Example of frequencies

<table>
<thead>
<tr>
<th>Room</th>
<th>Approximate number of attendees</th>
<th>Number of open laptops</th>
<th>Share of participants with divided attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION 1</td>
<td>45</td>
<td>19</td>
<td>42%</td>
</tr>
<tr>
<td>LOCATION 2</td>
<td>16</td>
<td>5</td>
<td>31%</td>
</tr>
<tr>
<td>LOCATION 3</td>
<td>120</td>
<td>31</td>
<td>26%</td>
</tr>
<tr>
<td>LOCATION 4</td>
<td>120</td>
<td>15</td>
<td>13%</td>
</tr>
</tbody>
</table>
Interlude

On your own, write down the sequencing of a project you remember.

Now *thinking back*, what was the impact of having that particular sequence?
What is a “survey”? 

- Asking structured questions
  - Online surveys
  - Telephone surveys
  - Structured face-to-face interviews
  - Structured online usability tests
Using Zoom, vote: Can you calculate “averages” of ethnographic data?

On your own, write down why or why not
New horizons

- Massive amount of easily collected text, coupled with analysis tools, makes it possible to create entirely new kinds of methods. Small calls these “crossover methods”

- Crossover methods include:
  - Turning narratives into social network data, and analyzing using social network analysis
  - Turning narratives into critical incidents and analyzing using sequence analysis techniques like structure analysis
Mixing ethnography with machine learning.
Make sure to...

- When collecting ethnographic data, make sure you have enough detail to power any other (quant) method
- When doing frequencies, make sure you are “counting” consistently
- When doing social network analysis, make sure you use a consistent definition for a node
- If you are training an algorithm, make sure you have clear rules based on social theory, not made up belief
Before doing anything:
- Ask both qualitative and quantitative research questions
  - Create quant hypotheses
  - Ask open-ended how, why, in what way questions
- Gather the mixed method team to discuss the philosophical divide

Before data collection:
- Create (qual) concepts and (quant) variables Plan early how to analyze data both quantitatively and qualitatively
- Create qualitative codes in data analysis tool
- Determine quantitative variables in data analysis tool

Concerns
Use caution when mixing methods because there are deep and fundamental differences that will create unexpected challenges in multiple phases of the research project.
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Use caution when mixing methods because there are deep and fundamental differences that will create unexpected challenges in multiple phases of the research project.

During analysis:
- Use inductive (what do the data say?) and deductive (what do the data say about a given hypothesis?)
- Consider inferential statistics if your design permits

During reporting:
- Create holistic models, diagrams, explanatory metaphors to “contain” (summarize) your qual data
- Create frequency tables of variables to summarize your quant data


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