Qualitative Insights from Social Media Data: Seeing the Forest and the Trees

AAPOR, 2022

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Frederick Conrad, University of Michigan
Michael Schober, The New School
Robyn Ferg, Westat
Juejue Wang, University of Michigan
Rebecca Dolgin, The New School
Mao Li, University of Michigan
Paul Beatty, US Census Bureau

May 11, 2022

Our Team

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Fred Conrad
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Michael Schober
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Robyn Ferg
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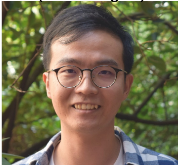

Paul Beatty
(US Census Bureau)

Friday, 1:15pm

Session 7: Using Google Searches and Tweets for Social Research

New Thinking About When Social Media and Survey Responses May Align

Frederick G. Conrad[1]
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Note: Views and ideas expressed here are those of the authors and not of the US Census Bureau

Our Goal

Use social media data to improve Census Bureau activities, broadly considered

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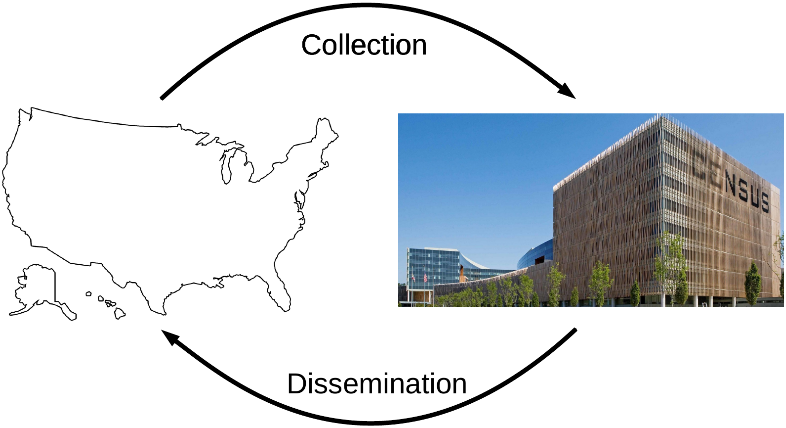

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- Sampling strategies

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- Sampling strategies
  - Oversample demographic groups or geographical regions where responses may be rapidly changing

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- Understand how data is used, and by whom

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- Improve data quality, e.g., survey precision

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  - Conrad, et al. (2019)
- Open question: When and how can social media data be used for public opinion research?

Paradigms

- Social media as analogous to a survey

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- Social media as analogous to a focus group

This talk: Qualitative insights

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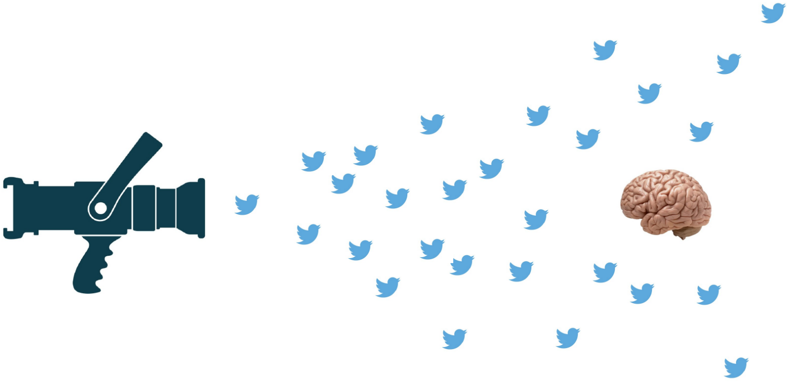
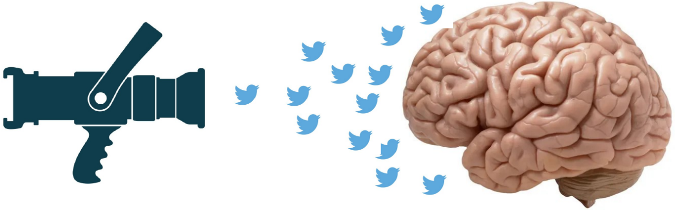
- Who is citing Census data, and how?
- More generally: **What is being said?**
- Just read the tweets!

Key Challenge



Ideal Solution



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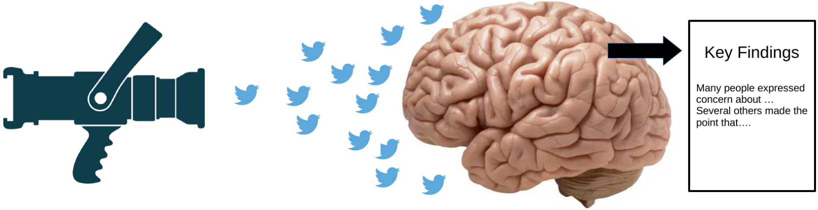
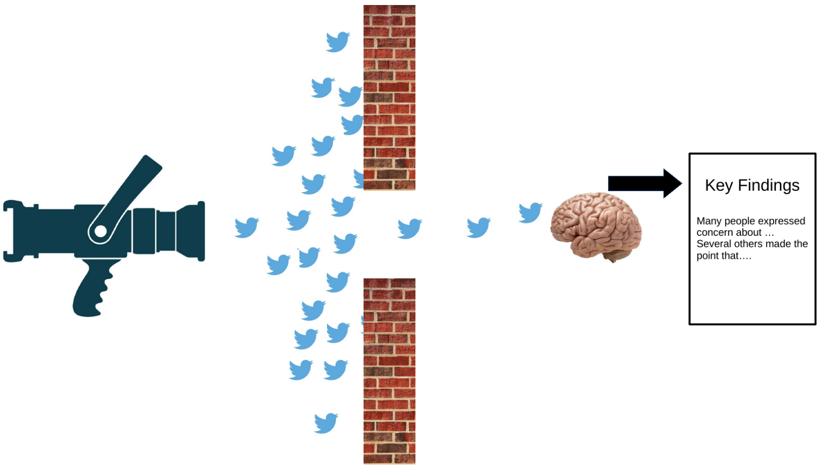
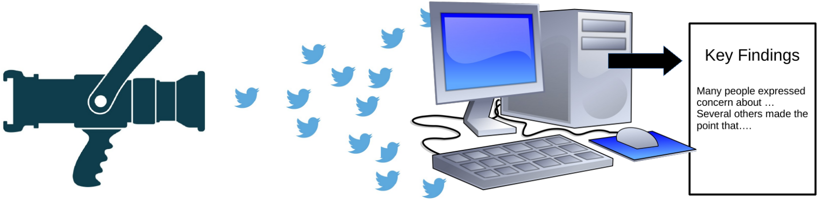


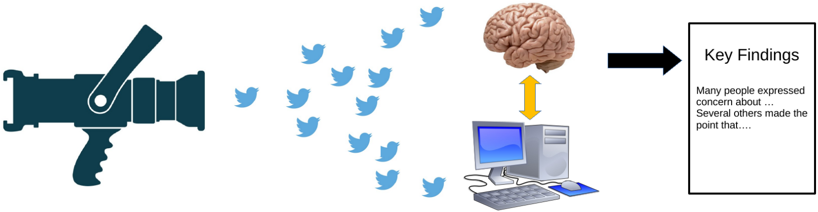
Random Sampling



Computer Analysis



Interactive Analysis



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3. To what extent do social media posts provide insights that complement or are entirely distinct from those obtained from traditional focus groups?

Question 1

What is the optimal level and type of automation to allow a human analyst to obtain novel, timely, and credible insights?

Tweet Browser:

- Interactive tool to allow a human to explore and digest a large social media corpus.
- Goal is to see *"both the forest and the trees."*

Tweet Browser

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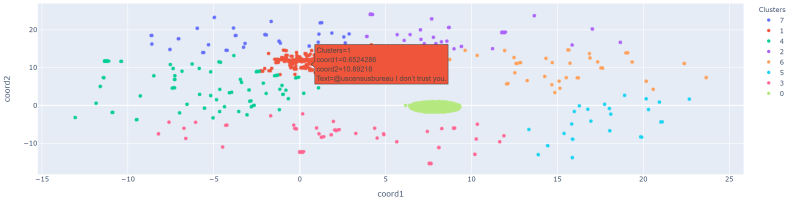
  - Graphical depictions, e.g., of important words
  - Distribution of tweets over time, geography

Tweet Browser

The plot below contains 26311 total tweets.



Most common words in each cluster:

Cluster	Proportion of Tweets	Number of Tweets	Top 5 Stemmed Words
0	0.557	14644	but californian questionnaires repkatieport struggl
4	0.053	1397	bug debt jimmyrayn trust unionist
6	0.023	617	com news theguardian trust us
3	0.043	1124	case judg mail probe trust
1	0.241	6346	2020censu count mail trust uscensusbureau
5	0.019	511	crime given minggao26 propens trust
2	0.037	983	cel good mail sun trust
7	0.026	689	baddcompani hansilowang right st trust

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- Requires systematic evaluation of insights
  - Consistent format for reporting insights
  - Scoring for quality, novelty, credibility

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  - Read a random sample of “census” tweets from 2020
  - “Search” for tweets using BERT-derived distance metrics

Similar content

Quote from CBAMS:

"The government has always been intrusive as it is, and it's probably a level of intrusion. That's why people are like, 'Hold on, what you want to know what's in my bed, at my house, and who's using my toilet? You should go mind your business."

Tweets:

- *"@Mededitor A surprisingly lean census. I recall in other years being asked to report the number of toilets in my home!"*
- *"The census is full of questions that I'm not sure I'd want a government to know about me."*

Similar content

- We explored several other quotes from CBAMS
- In all cases, we were able to find tweets expressing similar concerns / opinions
- We conclude that, *at least on this topic*, attitudes and opinions revealed in the focus group can also be discovered on Twitter
- Still an open question:
  - Would the *insights* derived from an analysis of social media replicate those from a focus group?
  - For example, would a "blind" analysis have also highlighted the same trust concerns?

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  - Example: Refusal to participate in the Census if it did *not* contain a citizenship question
  - Highlights ability of social media to provide insights on opinions of otherwise hard-to-reach populations

Thank You

We gratefully acknowledge support from the US Census Bureau through a cooperative agreement with the University of Michigan and the New School, "New Approaches to Analyzing Social Media Content for Enhancing Census Bureau Data" (award #CB20ADR0160002)