

#Parenting Projects: Using Twitter to Understand Mothering and Fathering

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Methods Hour
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Agenda

- Introduction and background
- Use of social media to study parenting
- Our project using Twitter data to study parenting self-disclosure online
- Challenges and opportunities using Twitter data to engage in parenting research & related discussions



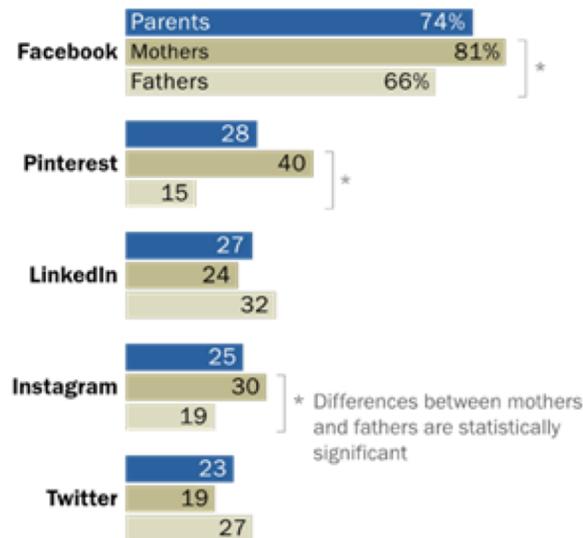
Introduction: Parents on Social Media

- Today's parents, especially those with young children, turn to the web and social media for parenting information
- Of them, 74% who use social media receive support
- Mothers more likely than fathers to seek parenting information and get social support from friends
- Parents use various social media platforms
 - More recently, parents turning to YouTube for children's content (Smith, Toor, & Kessel, 2018)

(Duggan, Lenhart, Lampe, & Ellison, 2015)

Parents Use a Range of Social Media Platforms; Facebook Tops the List

Among all internet users, the % of parents who use each social media platform

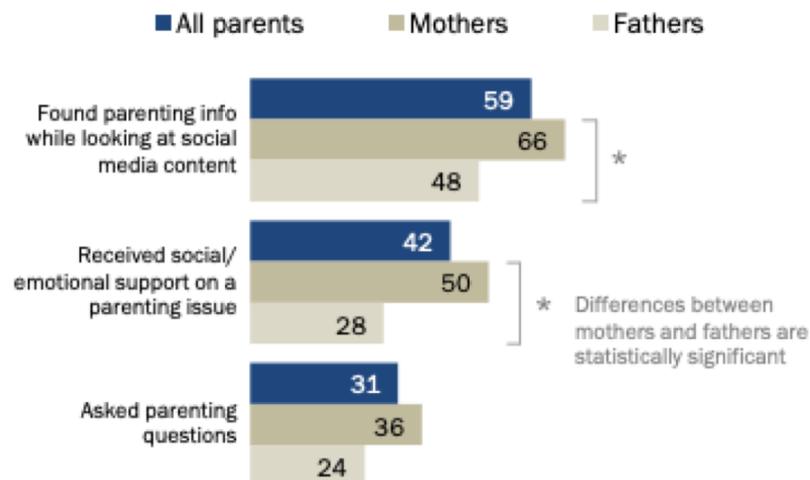


Source: Pew Research Center surveys, Sep. 11-14 and 18-21, 2014. N=1,597 internet users ages 18+. The margin of error for all internet users is +/- 2.9 percentage points. Parents in this survey were defined as those with children under age 18.

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Social Media is One of Many Sources for Parenting Advice and Information

Among all parent social media users, the % who have done the following on social media over the previous month...



Source: Pew Research Center surveys, Sept. 11-14 and 18-21, 2014. N=241 parent social media users ages 18+. The margin of error for all parent social media users is +/- 7.4 percentage points. Parents in this survey were defined as those with children under age 18.

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Use of Social Media to Study Parenting

- Prior studies have used Facebook, Reddit, and parenting blogs to study parenting
- Our rationale for choosing Twitter to study mothering and fathering:
 - Open and public source of data
 - Parenting beliefs can be observed naturalistically, potentially addressing social desirability bias
 - Parents turning to Twitter for parenting information and social support

(Ammari et al., 2018; Bartholomew et al., 2012; Schoenebeck, 2013)



Our Project Using Twitter to Study Mothering and Fathering

- Sample focused on stay-at-home mothers and stay-at-home fathers
- Both stay-at-home mothers and fathers have increased in number in recent decades
 - Fathers: 1.1 million in 1989 to 2.0 million in 2012
- A group that possibly defies traditional gender norms
- Research has shown that stay-at-home parents experience social isolation and turn to social media for emotional support

(Cohn & Caumont, 2014; Lee & Lee, 2018; Livingston, 2014, 2018)



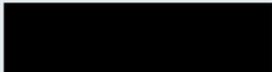
Our Project Using Twitter to Study Mothering and Fathering (cont.)

- Our three studies are largely exploratory in nature
- General theme focused on comparing stay-at-home fathers' and stay-at-home mothers' Tweets for similarities and differences
- Three main studies for this presentation:
 1. Modeling parenting topics
 2. Geocoding user-defined location
 3. Qualitative coding of spanking Tweets



Data Collection: Stay-At-Home Parents' Tweets

- Queried hashtags (e.g., #stayathomedad, #stayathomemom) for 30 days using Twitter API
- Used regular expressions on Twitter profiles to select self-identifying stay-at-home parents
- Utilized this seed dataset to engage in snowball sampling of followers for several iterations
- Cleaned up user data (e.g., eliminate duplicates)
- Total 697 unique father and 4,103 mother users



@ [redacted]

Husband to a most awesome woman.
Father of 3 amazing boys and 1 girl.
Foster Dad. Stay at Home Dad,
Beekeeper, I've been resisting since I
was born.



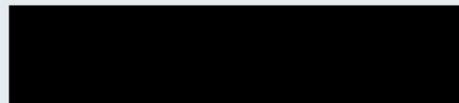
@ [redacted]

Just the every day occurrences in the life
of a stay at home mom with her toddler
and newborn ;)



@ [redacted]

Runner of 5k to 100 miles, cross country
& track coach, stay-at-home father of 3
boys & 2 girls, jack-of-all-trades. I
ferment things. Live with thadditude.



@ [redacted]

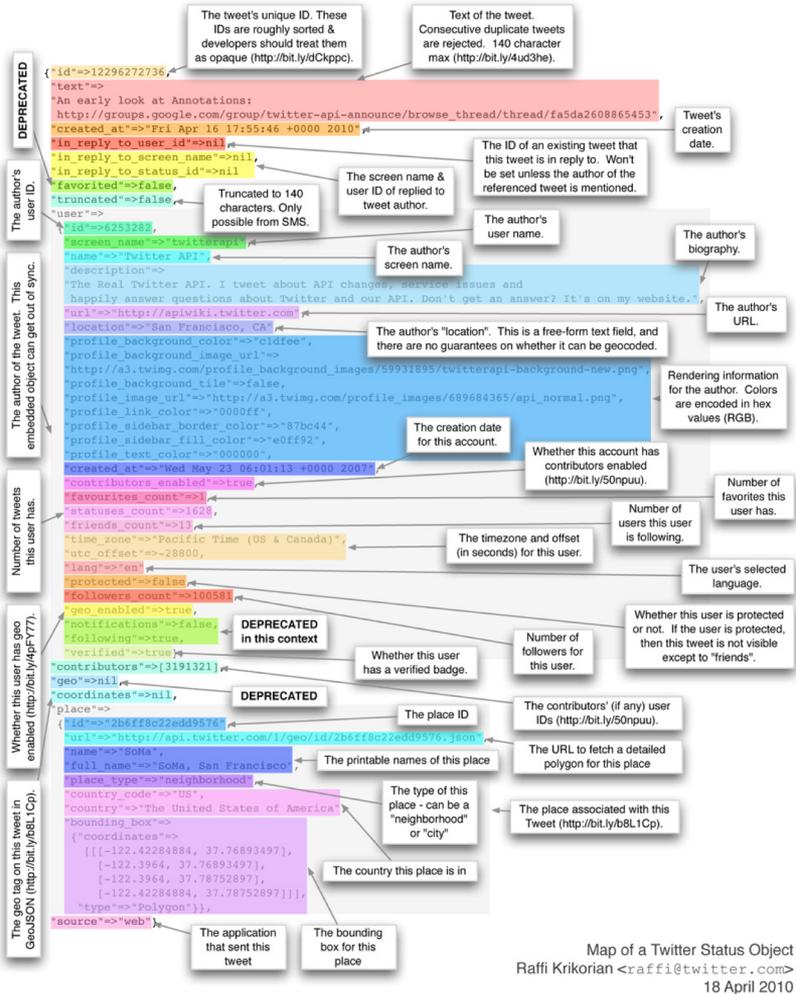
Stay at home mom to three girls, pixel
artist(GameMaker)believes that good
people exist despite overwhelming
evidence to the contrary. MomSquad





Data Collection: Stay-At-Home Parents

- Obtained stay-at-home parents' tweets using Twitter Resting API
 - Can get up to 3,200 most recent tweets
- Total 936,985 tweets from stay-at-home fathers
- Total 4,694,124 tweets from stay-at-home mothers
- Data cleaning involved eliminating punctuations, encoding emojis and symbols, lowercasing; collaboration with data scientists helpful



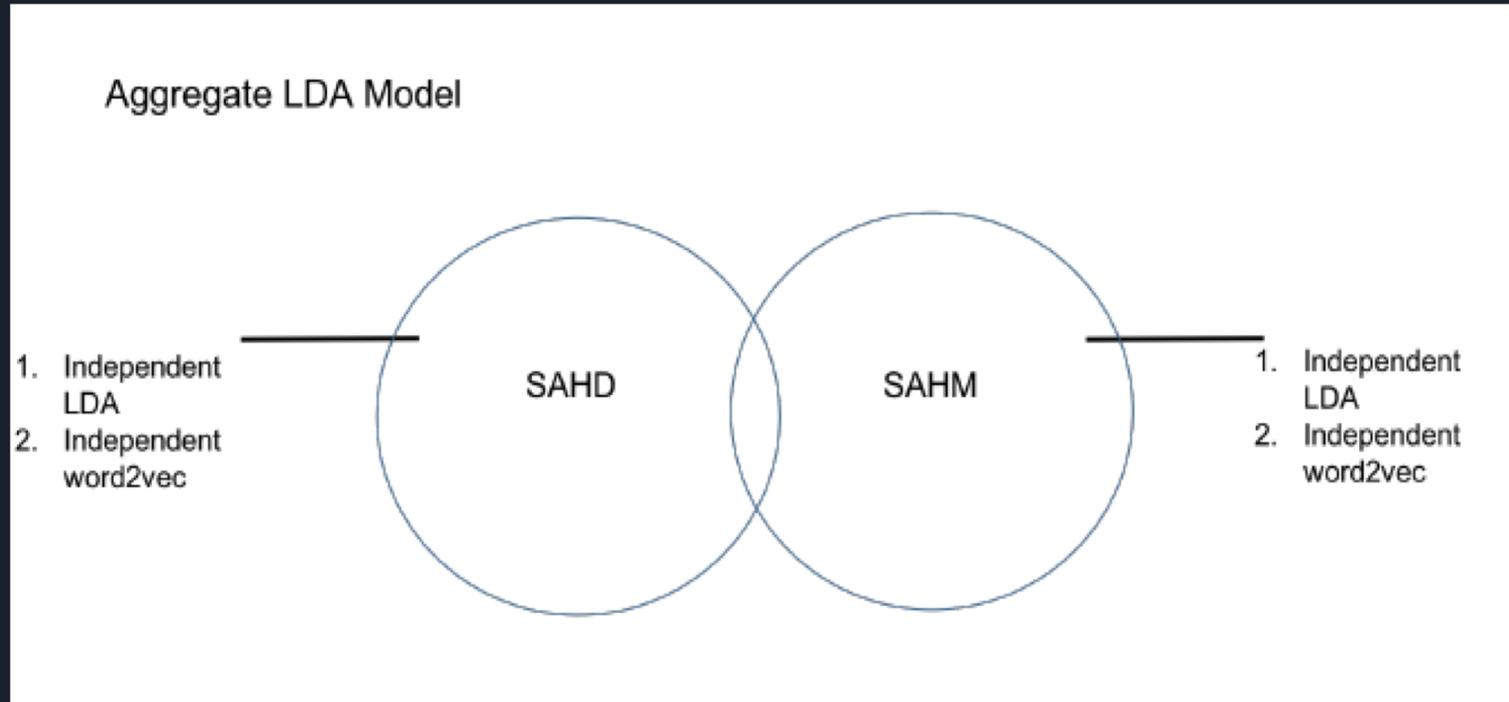
- A single tweet provides a ton of information or metadata
- Screen name, user-defined location, language, number of followers, coordinates in which tweet is being posted
- Twitter is constantly updating metadata features



Project #1: Modeling Parenting Topics

- Purpose was to model parenting topics stay-at-home fathers and stay-at-home mothers discuss on Twitter
 - Comparing similarities and differences
- Each user's tweets was a corpus, a collection of texts
- Used Latent Dirichlet Allocation (LDA) for topic modeling
- Used Word2Vec word embeddings to help differentiate between topics stay-at-home fathers and stay-at-home mothers discuss on Twitter

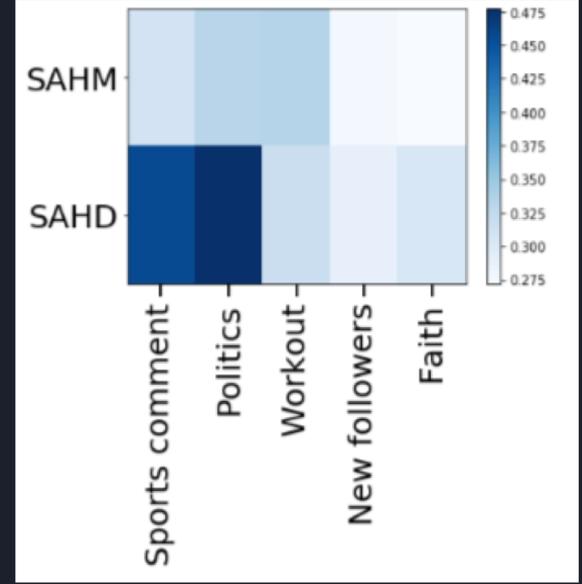
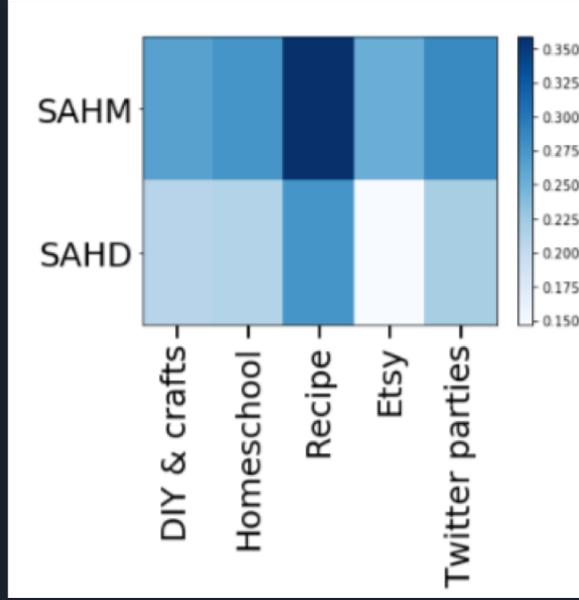
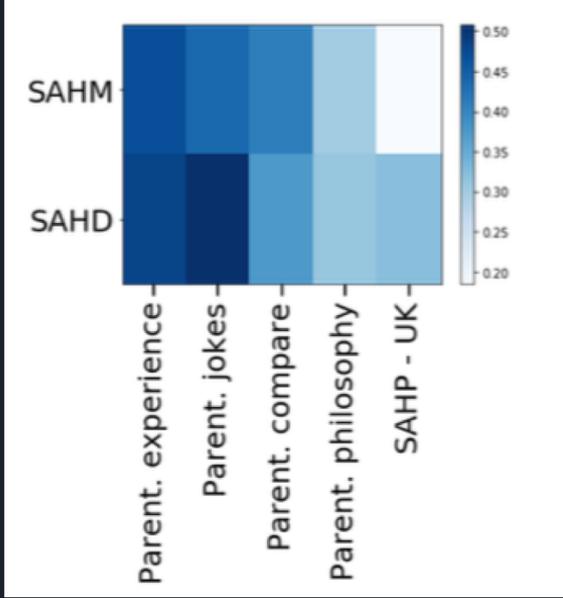
Project #1: Modeling Parenting Topics (cont.)





Results from Project #1

- Examples of shared topics amongst stay-at-home fathers and stay-at-home mothers:
 - Parenting experiences
 - Parenting philosophy
 - Do-It-Yourself projects and crafts
 - Giveaways, shopping, and monetization



Results from Project #1 (cont.)

- Topics unique to fathers and mothers:

Topic #	Topic Name	KTG	Prob distribution	SAHD/SAHM
1	Fatherhood advocacy/support	[dad, kid, thank, par, follow, gre, dadsummit, lov, get, tim, sahd, ad, mom, day, fath, us, w, lik, amazonfamily, fam]	0.02	SAHD
2	Brewing	[badg, earn, gard, beer, level, al, brew, ip, drink, day, new, superst, plant, photo, post, lik, today, see, gre, ti]	0.01	SAHD
3	Weight loss/exercise	[cal, fitbit, step, travel, mil, minut, lbs, exerc, diary, fitstats, myfitnesspalburn, food, goal, fitst, weigh, lost, sint, far, walk, mp]	0.03	SAHM

Table 1. This table shows the three unique topics that were discovered from the independent LDA models trained on SAHD tweets vs. SAHM tweets.

Project #2: Geocoding Stay-At-Home Parents' Self-Defined Locations

- Purpose was to employ user-defined location to plot where stay-at-home parents are and prevalence of tweets from those locations
- User-defined location available on Twitter profiles





Project #2: Geocoding Stay-At-Home Parents' Self-Defined Locations (cont.)

- Methods primarily involved combining Twitter user-defined location metadata and Google API to identify latitudes and longitudes
- Deleted parents without user-defined location
- Plotting data points via data visualizations tools in R (i.e., ggplot2 and ggmap)

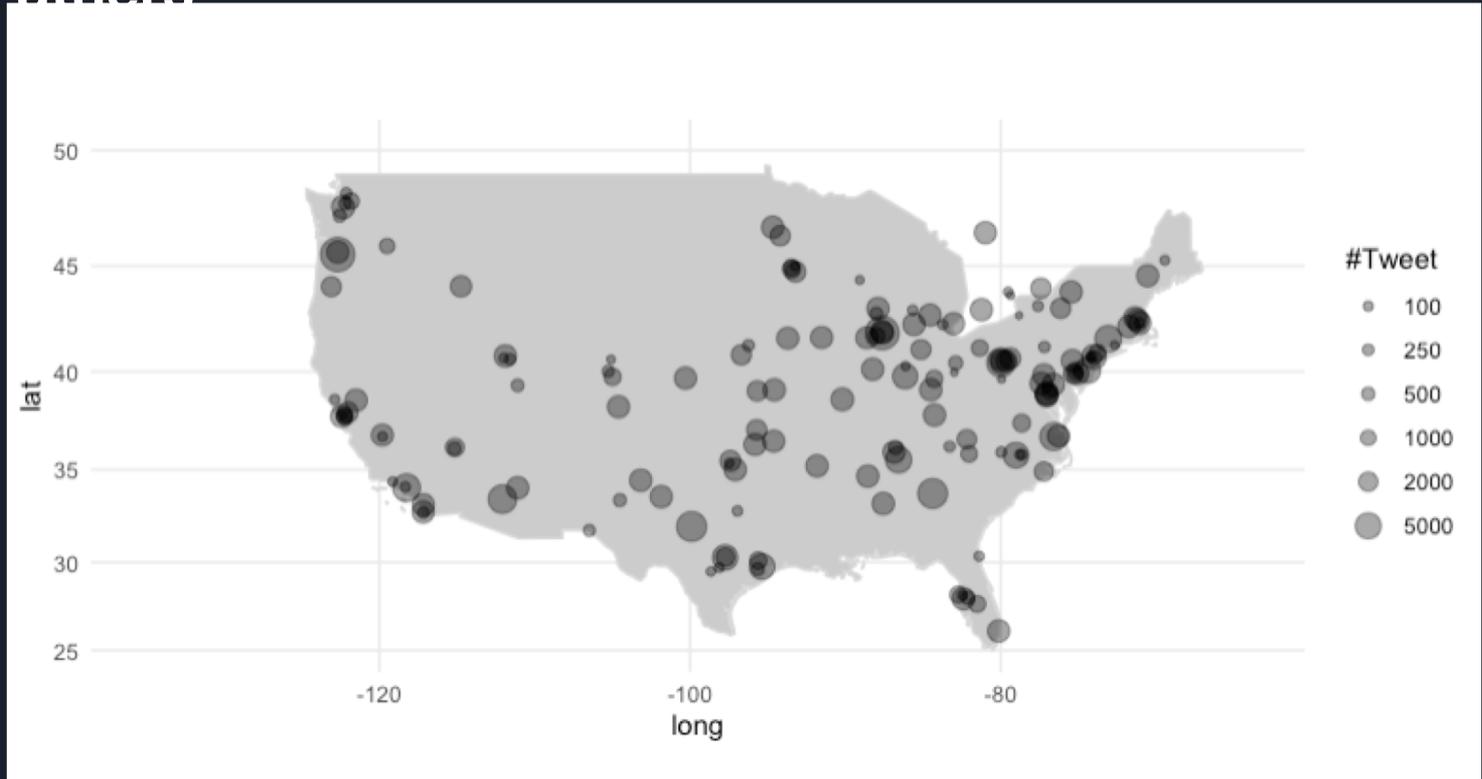
Stay-At-Home Fathers ($n = 553$)



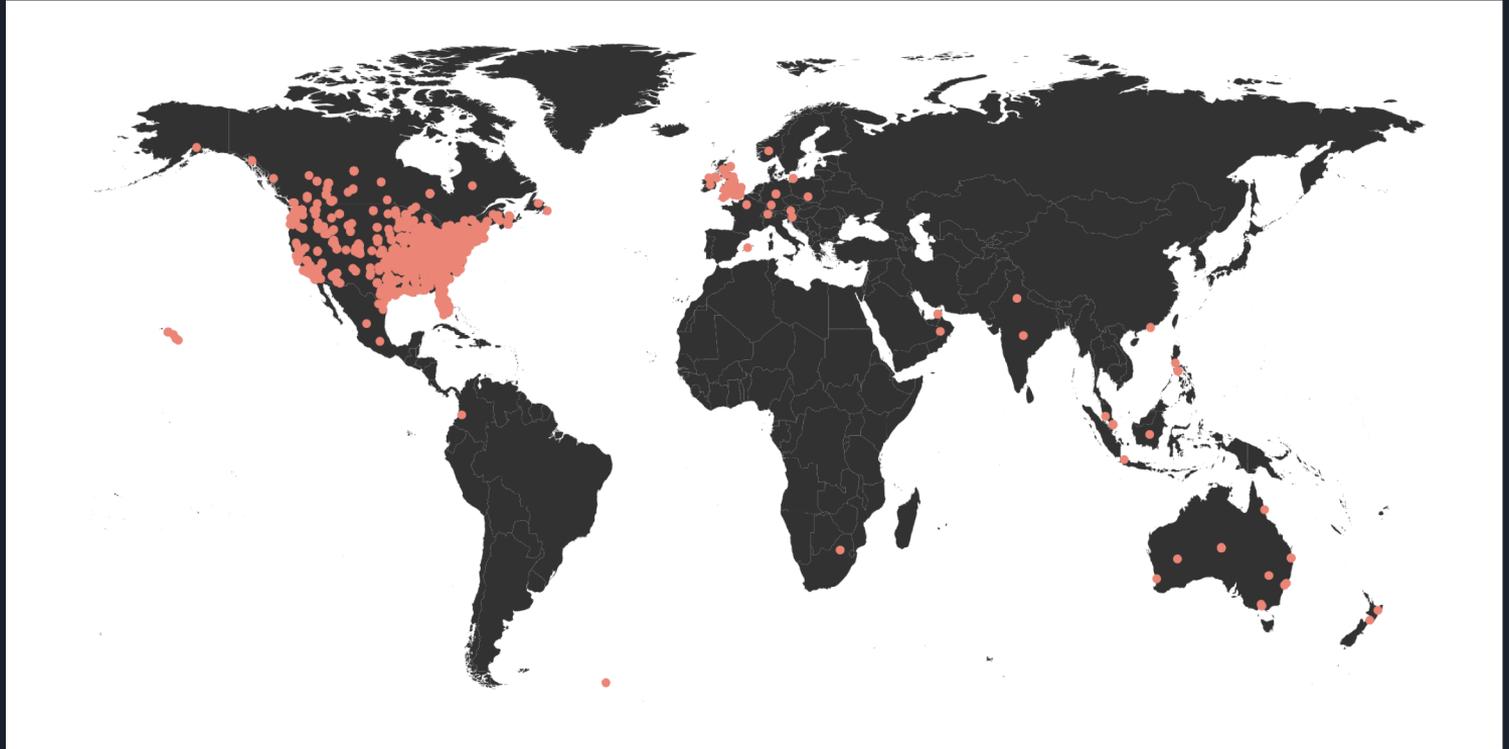
Narrowing in on U.S. Stay-At-Home Fathers



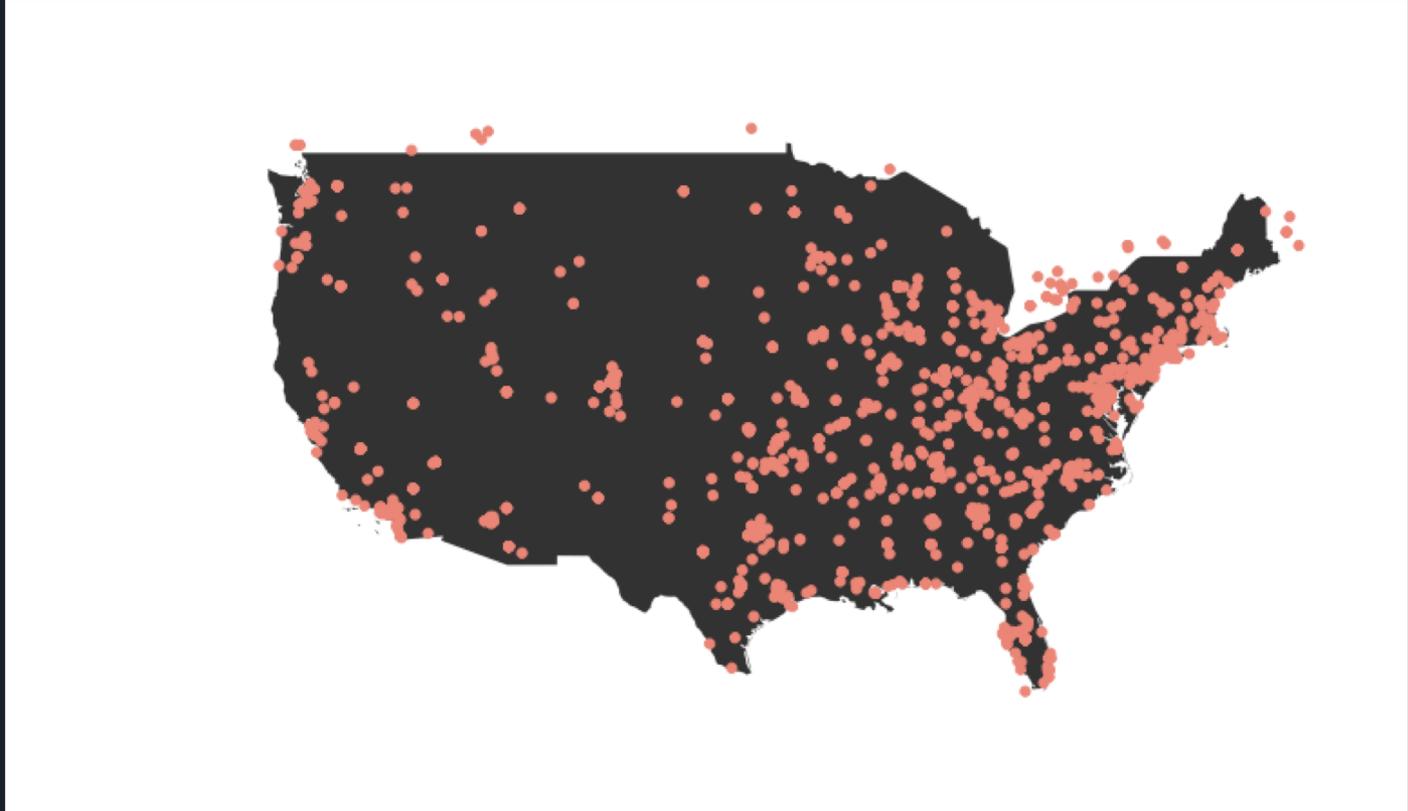
Proportion of Tweets by U.S. Stay-At-Home Fathers



Stay-At-Home Mothers ($n = 2,165$)



Narrowing in on U.S. Stay-At-Home Mothers



Proportion of Tweets by U.S. Stay-At-Home Mothers





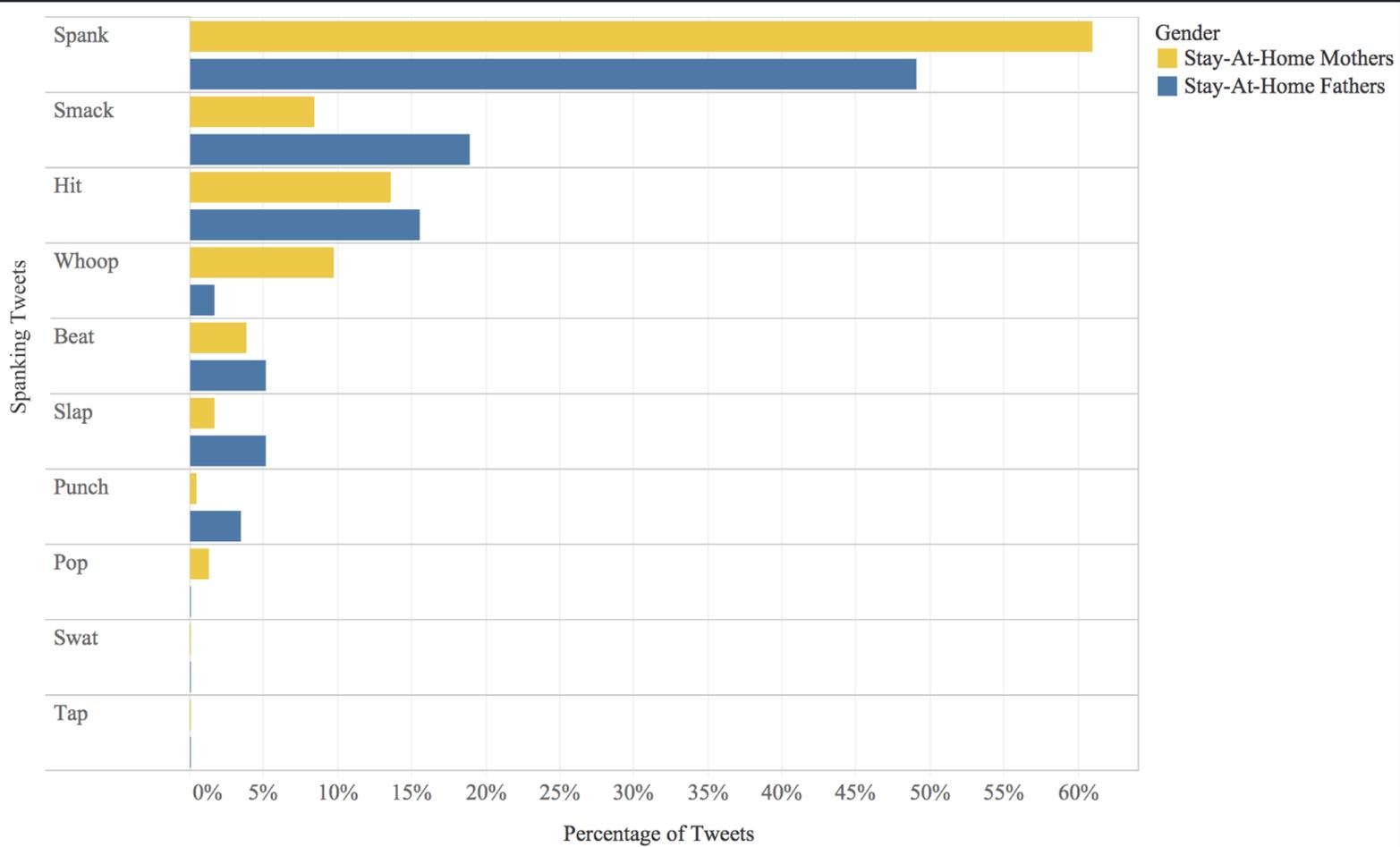
Project #3: Content Coding Stay-At-Home Parents' Spanking Tweets

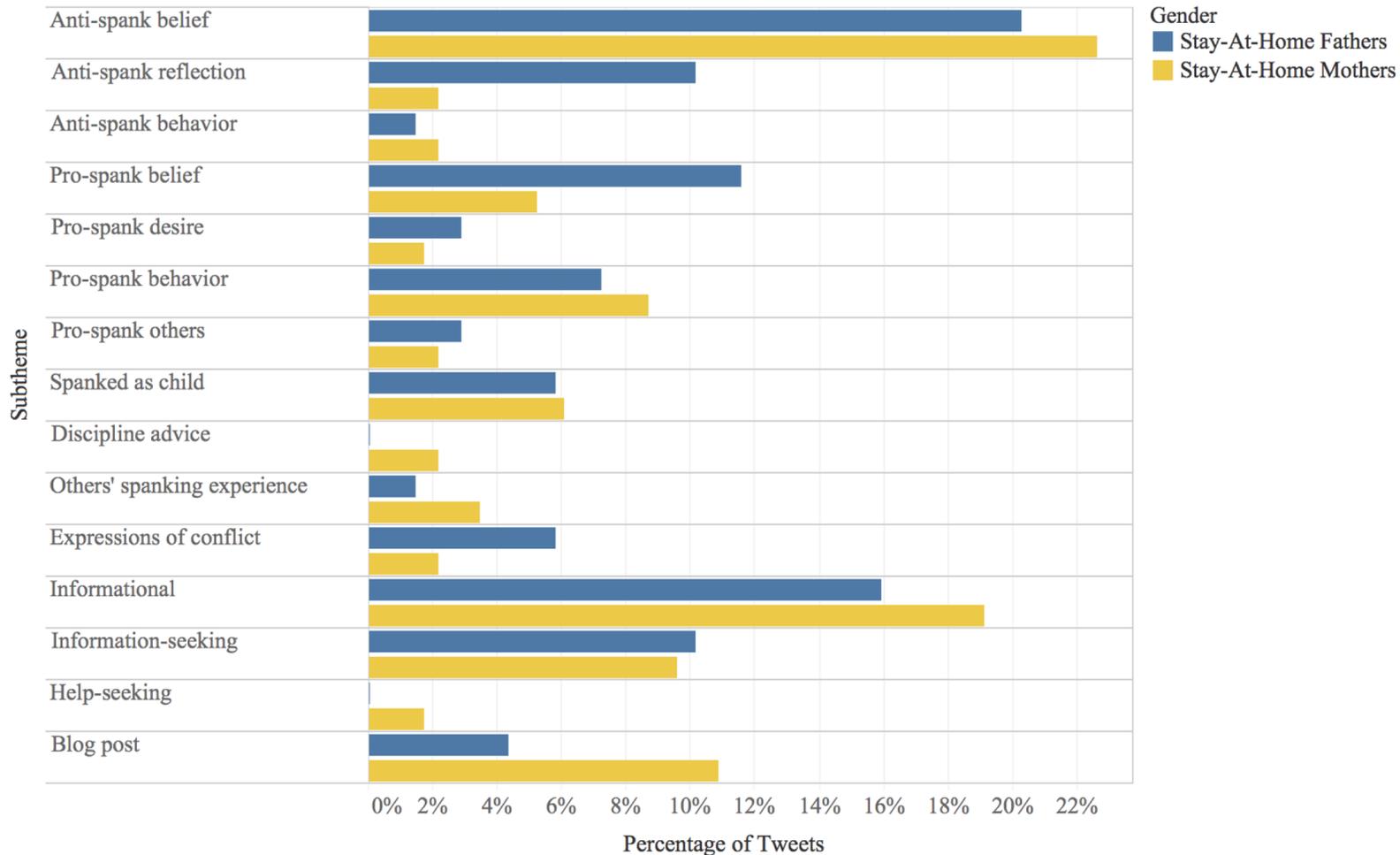
- Purpose was to examine stay-at-home mothers' and stay-at-home fathers' tweets concerning discipline, with a focus on spanking
- Involved combining both data science and qualitative coding methods
 - Used regular expressions to identify tweets that mention “spanking” and its variations (e.g., spanked)
 - Qualitative coding the tweets that were identified to look for emerging themes



Project #3: Content Coding Stay-At-Home Parents' Spanking Tweets (cont.)

- Also, looked for synonyms to spanking (e.g., beat, punch, slap, tap, whoop)
- Overall, found a very small set of tweets which suggests that stay-at-home parents may not readily discuss this parenting topic on Twitter
 - 69 tweets from fathers
 - 240 tweets from mothers







Results from Project #3

- Anti-spanking tweets common:
 - “If you spank my child, I will reign down my wrath on you. Other than that, I’m a pretty #chillaxdad” by @realsahd
- Substantial proportion of pro-spanking tweets:
 - “I believe there’s a difference between spanking & abusing and I see nothing wrong w/ the former as a last resort” by @savvymommy
- Information tweets quite common as well:
 - “RT children who are spanked have lower IQ’s compared to children who are not spanked according to new research. [link to article]” by @sahmlife



Challenges and Opportunities of Using Twitter Data in Parenting Research

- Challenges
 - Ethics: Consent? Compensation?
 - Methodological: Demographics. Identifying parents. Generalizability.
 - Time when data collected and study published
- Opportunities
 - Lots of free data to collect (text, network, metadata)
 - Space for creativity and innovation
 - Twitter likes academics



Challenges and Opportunities of Using Twitter Data: Discussion Questions

- What other challenges and opportunities do you see when considering using Twitter data to conduct social science research?
- How might you use Twitter data in your own research and what research questions might you consider answering?
- What feedback might you anticipate from journal reviewers and how might we best address them?



References

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