

# Torrential Twitter: Climate Change, Female Politicians, and Harassment

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# Background

- Harassment of female politicians is well-documented (Wagner, 2020; Erikson et al., 2023)
- Intersection between climate change denialism and misogyny (Anshelm & Hultman, 2014)
- Networked publics impact speech in the digital public sphere (boyd, 2010; Bruns, 2023)

# Theoretical Framework

- Theory of Deliberative Democracy
- Credited to Jürgen Habermas and Richard Sennet
- View on a scale; “to what extent” (Rossini, 2022)

# Research Questions

1. What is the severity of harassment female politicians receive when Tweeting about climate change, the environment, or related topics?
2. What types of accounts send harassing Tweets to female politicians?

# Hypotheses

1. Evidence of harassment will be detected in replies to Tweets that discuss climate change, the environment, or related topics.
2. Personal and Anonymous accounts belonging to right-wing and ideologically-driven users will send Tweets containing the most harassment to the female politicians.

# Methods

- Statistical programming software [R](#) (R Core Team, 2023)
- R Package for collecting Twitter threaded conversations: [voson.tcn](#) (Gertzel, 2021)
- Manual coding using a Google Form

# My Sample

Name of Politician	Number of Replies	Percentage
Chrystia Freeland	2400	58%
Elizabeth May	1058	26%
Laurel Collins	681	16%

# Severity of Harassment

1. Positive
2. Neutral
3. Questioning authority
4. Name-calling/Gender insults
5. Vicious language
6. Credible threats
7. Hate speech



# Type of Account

1. Personal
2. Professional
3. Bots
4. Spammers
5. Anonymous
6. Suspended/deleted

# Bayesian Hierarchical Model

$$y_i | \pi_i \sim \text{Bern}(\pi_i)$$

$$\text{logit}(\pi_i) = \beta_0 + \alpha_{a[i]}^{\text{account}} + \alpha_{p[i]}^{\text{politician}} + \alpha_{v[i]}^{\text{verified}}$$

$$\alpha_0 \sim \text{Normal}(0, 2.5)$$

$$\alpha_a^{\text{acc}} \sim \text{Normal}(0, \sigma_{\text{acc}}^2) \text{ for } a = 1, 2, \dots, A$$

$$\alpha_p^{\text{pol}} \sim \text{Normal}(0, \sigma_{\text{pol}}^2) \text{ for } p = 1, 2, 3, P$$

$$\alpha_v^{\text{ver}} \sim \text{Normal}(0, \sigma_{\text{ver}}^2) \text{ for } v = 0, 1, V$$

$$\sigma_{\text{acc}} \sim \text{Exponential}(1)$$

$$\sigma_{\text{pol}} \sim \text{Exponential}(1)$$

$$\sigma_{\text{ver}} \sim \text{Exponential}(1)$$

# Results (Model)

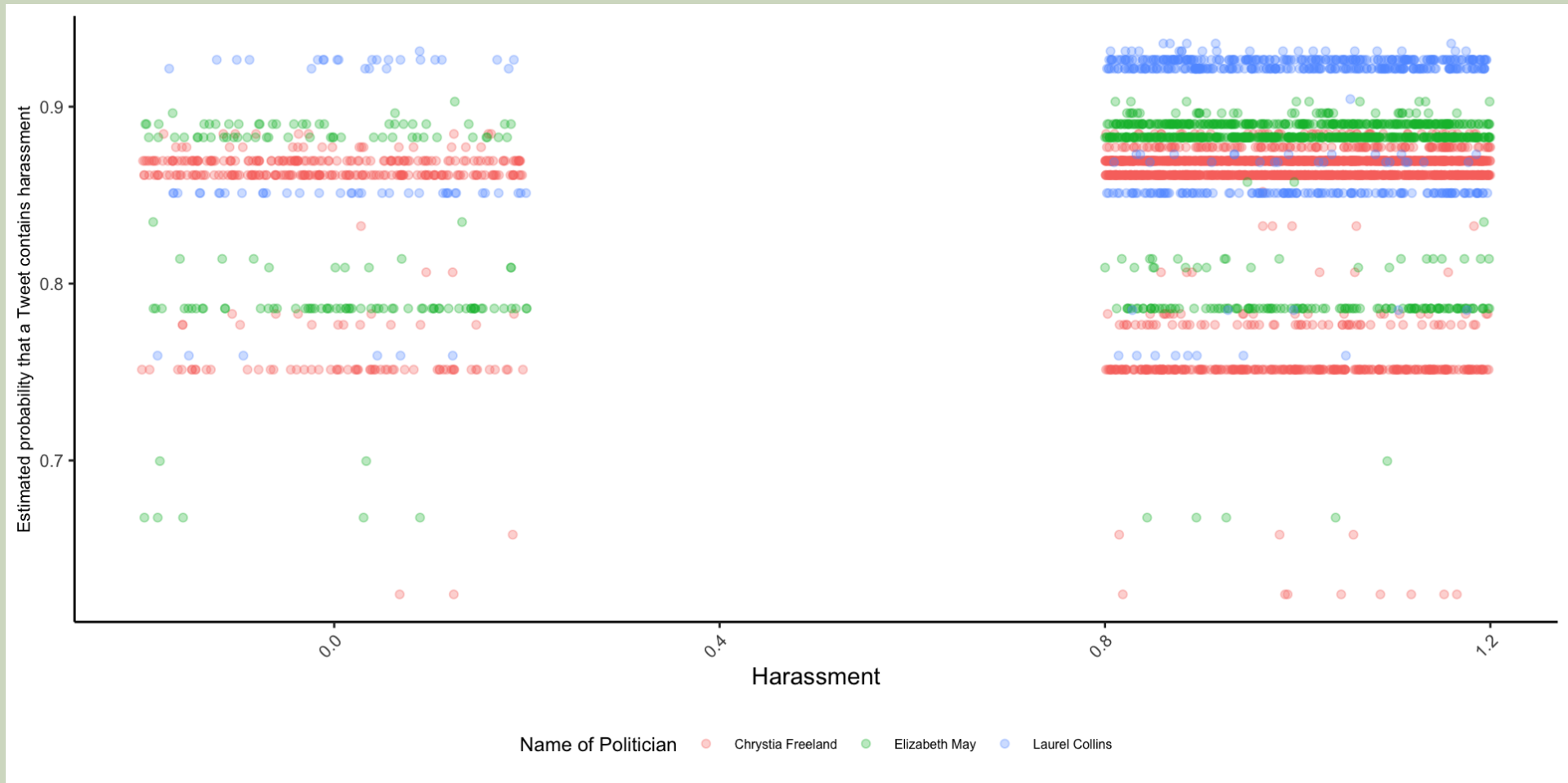


Figure 1: Predicting whether a Tweet contains harassment or not, on the basis of the type of account behind the Tweet, which politician the Tweet was in response to, and whether a user is verified.

# Results (Coding)

Severity of Harassment	Number of Replies	Percentage
Positive	44	1%
Neutral	542	13%
Questioning Authority	2284	55%
Name-calling/Gender insults	1060	26%
Vicious language	144	3%
Credible threats	33	1%
Hate speech	32	1%

# Results (Coding)

Type of Account	Number of Accounts	Percentage
Personal	802	19%
Professional	45	1%
Bots	10	0%
Spammers	1701	41%
Anonymous	1515	37%
Suspended/deleted	66	2%

# Discussion: Questioning Authority

A Tweet categorized as **Questioning authority** sent to MP May.

## Tweet

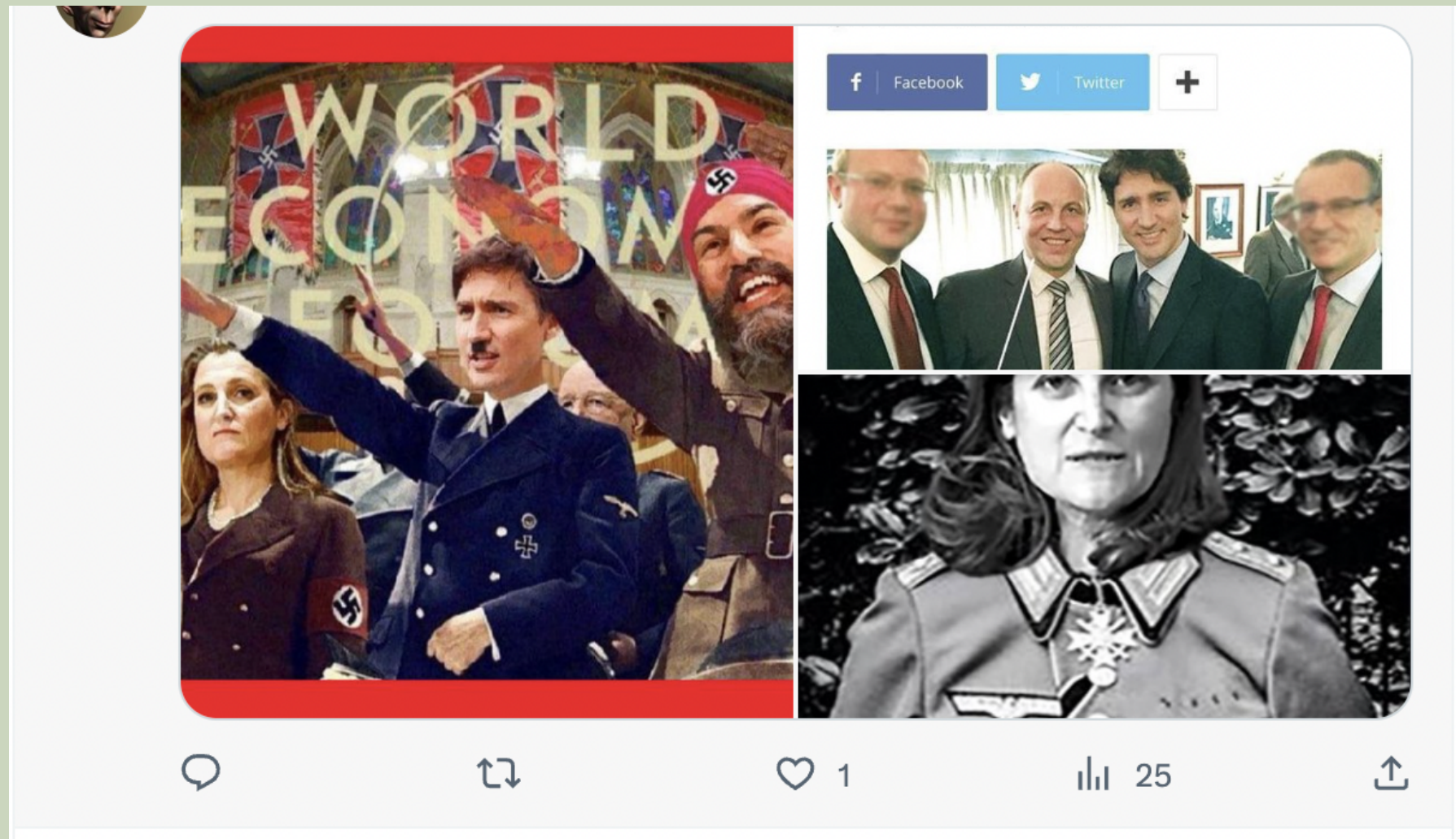
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@ElizabethMay Do you remember the acid rain crisis - just about killed us all; then the ozone hole..how we survived? And the ice caps melting..good thing coast didn't get submersed. Now this time can you show legitimate science? No hey? Weird, climatologists have expertise that disagrees

# Discussion: Type of Accounts

- More Spammers and Anonymous accounts than anticipated
- Fewer Suspended/deleted accounts
- Professional accounts often belonged to Federal Conservative MPs

# Discussion: Hate Speech



Example of a reply to a Tweet sent by DPM Freeland which revives historical photographs through memes and contains **Hate Speech**



# Deliberative Democracy

- MP May's account best fulfills the definition
- MP Collins' account mostly fulfills the definition
- DPM Freeland's account does not

# Why this matters

- Future of democratic conversations online
- We cannot let female politicians self-censor or be deterred from running for office
- Issue salience: continued conversations about climate change in traditional and social media

# Thank You

- Code, select data, and paper available:  
[https://github.com/InessaDeAngelis/torrential\\_twitter\\_bell\\_conf](https://github.com/InessaDeAngelis/torrential_twitter_bell_conf)
- Questions, comments, and feedback welcome: [Inessa.DeAngelis@mail.utoronto.ca](mailto:Inessa.DeAngelis@mail.utoronto.ca)
- Find me on GitHub & Twitter: **@InessaDeAngelis**