



Privacy, Anonymity, and User-Centered Design

Dr. Kaylea Champion

February 26, 2025

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- Industry experience: IT systems (career ladder: service delivery, system administration, management, leadership)

Plan for the day

- Quick introduction [done!]

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 - Share some perhaps-surprising research results about anonymity seekers
 - Discuss and apply these ideas
- We can only scratch the surface today.

Class context: design of social computing systems

- Theories of social computing, in an applied setting

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 - ...leading to a student-selected project.

- Communication (Discord)

Design context: social computing systems

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- Question and answer (StackExchange, Quora)
- Connection (social media)
- Coordination (productivity, workflow, collaboration platforms – GitHub, Wikipedia, Jira)



Think for a moment about why people seek privacy.



[At the Acropolis. Phil K 37. via flickr, CC BY-NC-ND 2.0]

11



Are people only good when they have a fear of punishment?
Or can they be good when truly anonymous?

Why do we care about privacy in design of social computing systems?

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 - Privacy cynicism
 - Privacy violations
 - Who / what is private? From whom?

- Anonymity and privacy are sometimes used interchangeably

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Smith, Dinev, & Xu. (2011). Information Privacy Research: An Interdisciplinary Review. *MIS Quarterly*,
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- We'll focus on just anonymity today.

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 - support groups

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 - building relationships? Mixed/conflicting results
- Much of this is made possible by “mediation” (i.e. technology, and how we design it)

The Marx Model of Identifiability

The Marx Model of Identifiability – 10 facets



[Photo of Karl Marx sourced from Wikimedia Commons, public domain.]

The Marx Model of Identifiability – 10 facets

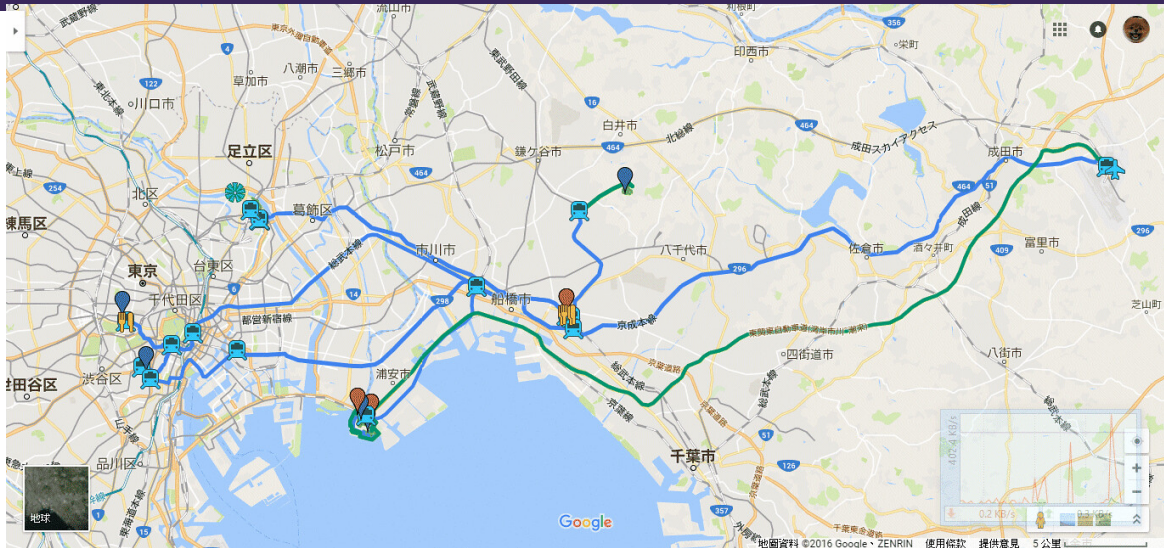


information about an individual

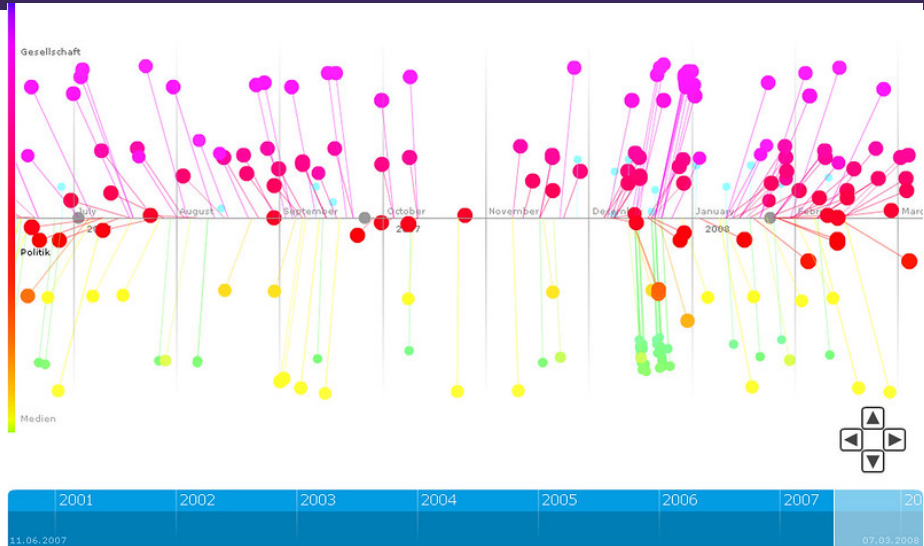


shared traits they may typify





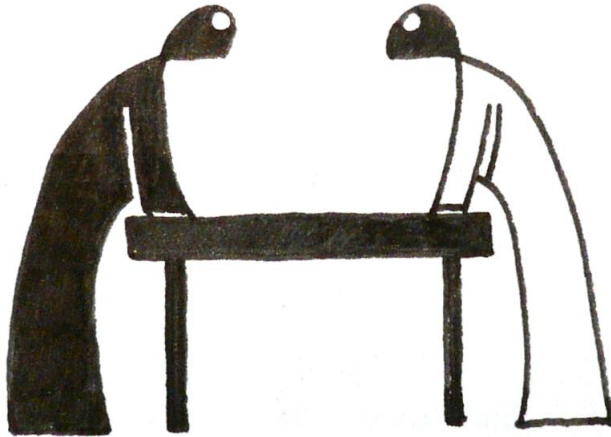
temporal



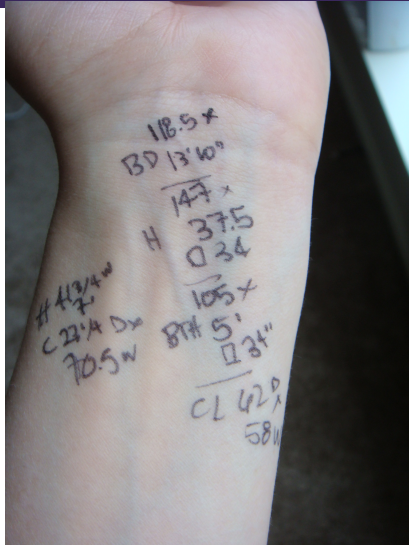
A stylized illustration featuring a man in a green jacket and glasses holding a smartphone. He is surrounded by various digital avatars and icons, including a person in a white hoodie, a person in a white coat, and several cartoonish faces. The background is blue with a network-like pattern of lines. The text '©PPASS' is visible in the bottom left corner.










measurement of characteristics



ferences [edit source]

1. ^ "Linda Brown obituary | Register" . *The Times*. Retrieved April 11, 2018.
2. ^ [a b c d e f](#) Smith, Harrison; Silverman, Ellie. "Linda Brown Thompson, girl at center of Brown v. Board of Education case, dies" . *The Washington Post*. Retrieved April 25, 2018.
3. ^ [a b c d e f g h i j k l](#) "Linda Brown Biography" . *Biography.com*. Retrieved April 25, 2018.
4. ^ [a b c](#) Grinberg, Emanuella; Jones, Sheena; Vera, Amir. "Linda Brown, woman at center of Brown v. Board case, dies" . *CNN*. Retrieved April 25, 2018.
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6. ^ [a b c d e f](#) Romo, Vanessa. "Linda Brown, Who Was At Center Of Brown v. Board Of Education, Dies" . *NPR*. Retrieved April 25, 2018.
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12. ^ "The Court's Decision - Separate Is Not Equal" . *americanhistory.si.edu*. Retrieved February 1, 2022.



Facets of Identifiability

- information about them as an individual (name, ancestry)
- shared traits they may typify (gender, age, occupation)
- geographic (these are about reachability, and can be fixed – such as residence, and mobile, such as e-mail address)
- temporal (when they did what activity)
- networks and relationships
- objects (that they own)
- behavioral (patterns of communication, purchases, work, norm compliance)
- beliefs, attitudes, emotions
- measurement characterizations (SAT scores, credit rating, HIV status)
- media references (what's been said about whom in public)

Why do people seek anonymity?

- Criminality?



A Forte, N Andalibi, R Greenstadt. Privacy, Anonymity, and Perceived Risk in Open Collaboration: A Study of Tor Users and Wikipedians in *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW 2017)*. <https://dl.acm.org/doi/10.1145/2998181.29982733>

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 - Some people have a strong desire for anonymity....



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Service provider perspective

- Identity information can be used as a driver for profit



BM Hill, A Shaw. The Hidden Costs of Requiring Accounts: Quasi-Experimental Evidence From Peer Production. Communication Research. Preprint:
<https://arxiv.org/abs/2111.10688>

N McDonald and A Forte. 2020. The Politics of Privacy Theories: Moving from Norms to Vulnerabilities. *Proceedings of the 2020 ACM Conference on Human Factors in Computing Systems*. (CHI 2020) <https://doi.org/10.1145/3313831.3376167>

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 - Perspective of vulnerable populations may be unknown and unfamiliar



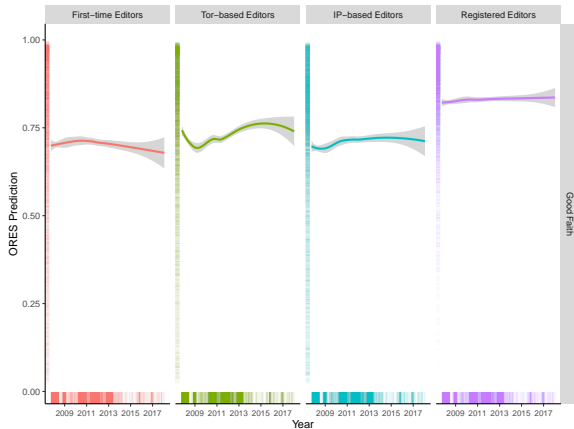
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But anonymity-seekers may be a lot like everyone else

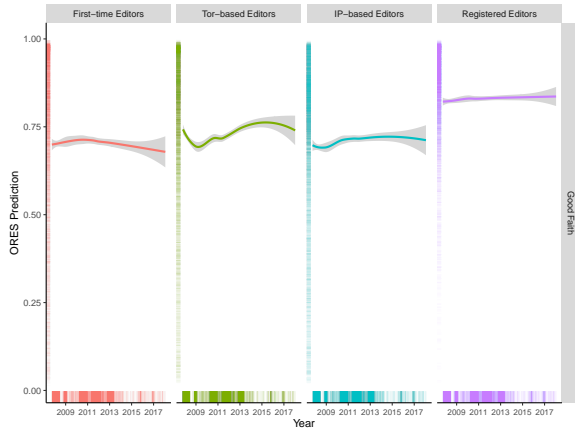
- Context: Wikipedia



C Tran, K Champion, A Forte, BM Hill, R Greenstadt. Are anonymity-seekers just like everybody else? An analysis of contributions to Wikipedia from Tor in 2020 *IEEE Symposium on Security and Privacy (SP)* Preprint: <https://arxiv.org/pdf/1904.04324.pdf>

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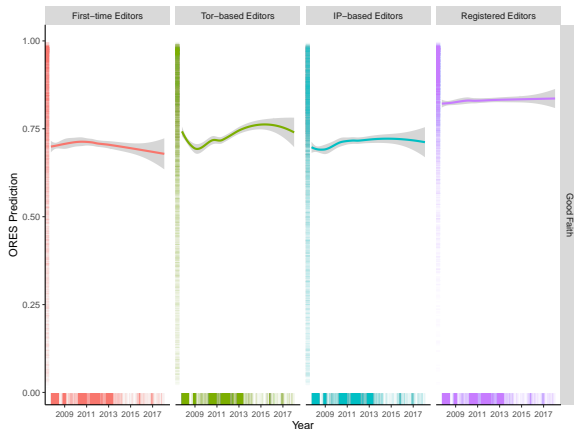
- Context: Wikipedia
- 4-group comparison:
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 - Anonymity-seekers using Tor
 - Contributors without accounts
 - Accountholders



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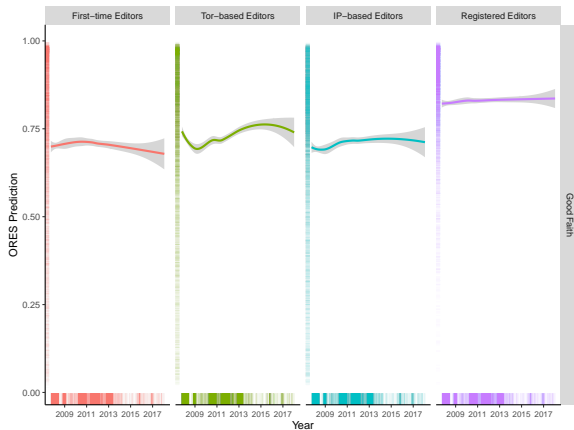
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- Different topics (more politics, religion, tech, less American football)



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What were those contributions?

- Many typical edits:

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But the bad stuff!

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 - Could also do digital ethnography, gather feedback in design workshops

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- Collect data and do research about the impacts of policy changes around identity

Any Questions?

Let's do our hands on activity!

Facets of Identifiability

Your task:

1. Form a group with your neighbors (3-ish)

Facets of Identifiability

- information about an individual (name, ancestry, DNA, fingerprint)
- shared traits they may typify (gender, age, occupation)
- geographic – location, 'reachability' (residence, e-mail address)
- temporal (when they did what activity)
- networks and relationships
- objects (that they own)
- behavioral (patterns of communication, purchases, work, norm compliance)
- beliefs, attitudes, emotions
- measurement characterizations (SAT scores, credit rating, opinions of others, HIV status)

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5. Risks and benefits of proposed change? To platform? To user? How could this be measured?

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Let's Connect!



Interested in privacy and anonymity?

Let's talk!

`kaylea@uw.edu`

`@social.coop/@kaylea`

`kayleachampion.com`

This work was supported by the National Science Foundation (awards CNS-1703736 and CNS-1703049).

Strategies for remaining open to anonymity seekers

1. Incorporate anonymity-seekers into the operational model (Reddit, Signal, VPNs, NextCloud)

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Use a threat model for analyzing contributions

