Towards a Networked Demography?

A case study of gender countercultures on Reddit

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Overview

We study five grassroots **gender countercultures on Reddit**.

We examine **genealogical ties, indexing ties,** and **algorithmic ties** between them.

We find:
> indexing behaviors **correspond to shared history**
> social identities **evolve in relation to each other**
> potential for a **network approach** to social identity

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"Conventional" Gender Model

According to this model, gender is:

> binary
> physiological
> immutable[1]

[1] West, C., & Zimmerman, D. H. (1987). Doing gender. Gender & society, 1(2), 125-151; Keyes, O. (2018). The misgendering machines: Trans/HCI implications of automatic gender recognition. Proceedings of the ACM on Human-Computer Interaction, 2(CSCW), 1-22.

This model is ubiquitous...

...yet incomplete.

> In the U.S., **a growing population identifies as transgender**[1].

> **Social behaviors inconsistent with this model** have been documented and studied **as far back as the Roman empire**[2].

> Because nearly all demographic research uses this model, **we do not have reliable data** on the life, health, and wellbeing of transgender people in the U.S.

[1] Meerwijk, E. L., & Sevelius, J. M. (2017). Transgender population size in the United States: a meta-regression of population-based probability samples. American journal of public health, 107(2), e1-e8.

[2] Campanile, D., Carlà-Uhink, F., & Facella, M. (Eds.). (2017). TransAntiquity: Cross-Dressing and Transgender Dynamics in the Ancient World. Taylor & Francis.

...yet incomplete.

I argue that this is a problem in **knowledge equity.**

> Transgender people should have the same access to basic knowledge about themselves

> Exclusion from scientific institutions creates an opportunity for mis- and disinformation to spread.

"Why can't we just add more radio buttons*?"

or checkboxes, drop-down items, database fields, ….

To which gender identity do you most identify?

- ○ Female
- ○ Male
- ○ Transgender Female
- ○ Transgender Male
- ○ Gender Variant/Non-Conforming
- ○ Not Listed [   ]
- ○ Prefer Not to Answer

"Why can't we just add more radio buttons*?"

or checkboxes, drop-down items, database fields, ….

This is probably better than nothing BUT it also doesn't address the actual problem.

> The conventional model conflates physiological, biological, social, and cultural understandings of gender and sex.
>   - There is **no consensus** on what differentiates sex category from gender category[1].
>   - The conventional model is really a "folksonomy" of gender[2].

> A person's gender/sex category can change over time.

> "M" and "F" can mean lots of different things depending on the person and the context.

[1] Haraway, D. J. (2001). "Gender" for a Marxist dictionary: the sexual politics of a word. In *Women, gender, religion: A reader* (pp. 49-75). Palgrave Macmillan, New York.
[2] Keyes, O. (2018). The misgendering machines: Trans/HCI implications of automatic gender recognition. Proceedings of the ACM on Human-Computer Interaction, 2(CSCW), 1-22.
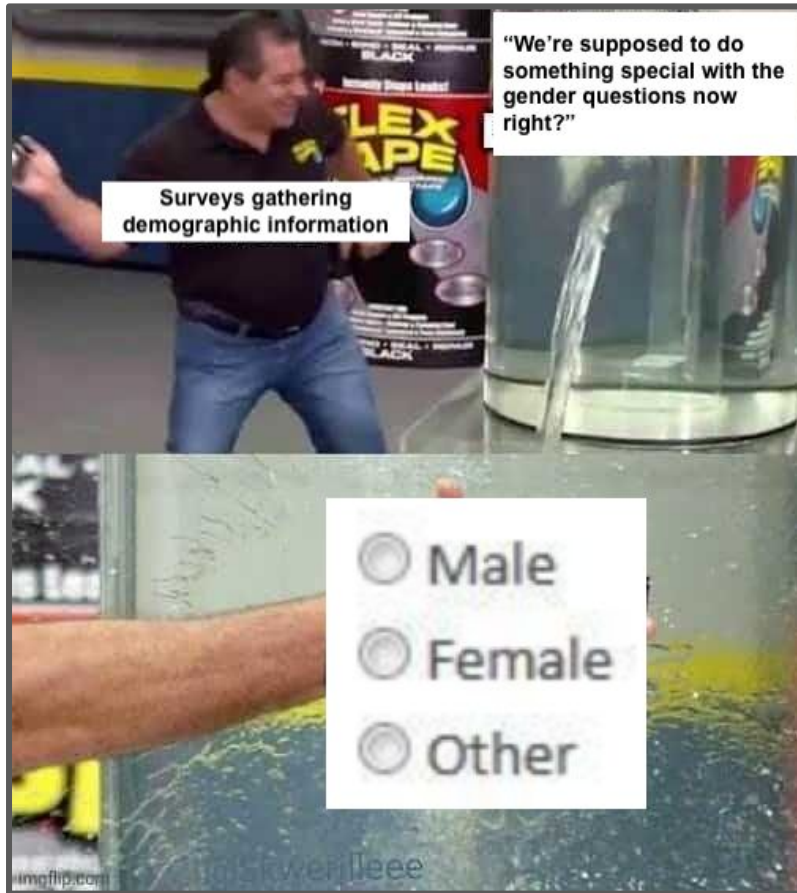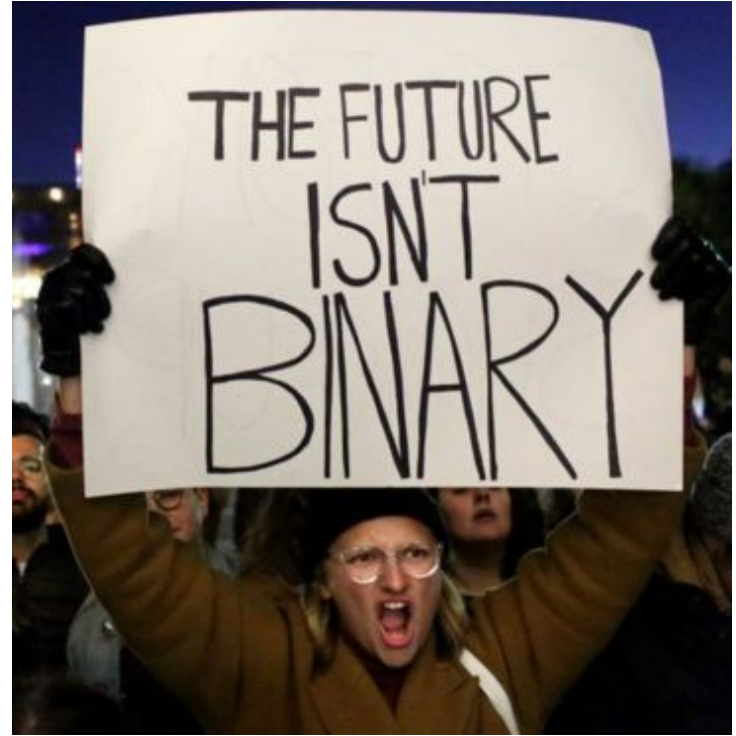
I argue that a trans-inclusive demography requires us to **change how we think about identity categories.**

Gender Countercultures

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> Gender

Reddit

Data

RQ 1

RQ 2

RQ 3

Gender Countercultures

> crowd-driven communities that seek to **nuance, reshape, or reject** the conventional gender model.

Gender Countercultures on Reddit

Reddit has hosted a variety of gender countercultures and movements, such as:

> The #MeToo Movement[1]

> Transgender and non-binary communities[2]

> Masculinity, "geek culture," and a sense of male marginalization[3]

> The "Red Pill" and the "Manosphere"[4]

These countercultures are tied to conflicting gender *ontologies*.

[1] Manikonda, L., Beigi, G., Kambhampati, S., & Liu, H. (2018, July). # metoo through the lens of social media. In *International conference on social computing, behavioral-cultural modeling and prediction and behavior representation in modeling and simulation* (pp. 104-110). Springer, Cham.

[2] Darwin, H. (2017). Doing gender beyond the binary: A virtual ethnography. Symbolic Interaction, 40(3), 317-334; Jaroszewski, S., Lottridge, D., Haimson, O. L., & Quehl, K. (2018, April). " Genderfluid" or" Attack Helicopter" Responsible HCI Research Practice with Non-binary Gender Variation in Online Communities. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (pp. 1-15).

[3] Marwick, A. E., & Caplan, R. (2018). Drinking male tears: Language, the manosphere, and networked harassment. Feminist Media Studies, 18(4), 543-559.

[4] Massanari, A. (2017). # Gamergate and The Fappening: How Reddit's algorithm, governance, and culture support toxic technocultures. New Media & Society, 19(3), 329-346; Ging, D. (2019). Alphas, betas, and incels: Theorizing the masculinities of the manosphere. Men and Masculinities, 22(4), 638-657.

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> Gender   Reddit   Data   RQ 1   RQ 2   RQ 3

Our Five Case Studies

From existing literature, we identified **five themes of gender countercultures on Reddit:**

> The "Manosphere"[1]

> The "Red Pill"[2]

> Misandry[3]

> Feminism[2]

> Gender minorities[4]

[1] Ging, D. (2019). Alphas, betas, and incels: Theorizing the masculinities of the manosphere. Men and Masculinities, 22(4), 638-657.

[2] Massanari, A. (2017). # Gamergate and The Fappening: How Reddit's algorithm, governance, and culture support toxic technocultures. New Media & Society, 19(3), 329-346.

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Reddit as an Information Platform

Reddit is a social media platform organized by **subreddits**.

Subreddits serve as **social, informational, and cultural centers**.

Subreddits are interest-based. Users subscribe to the subreddits that interest them and see this content in their feed.

Community members called **moderators regulate subreddit content**. Subreddits develop distinct cultures.

Reddit as a Networked Information Platform

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Relationship	Technical Definition	Label
Moderators can moderate many subreddits.	Shared Moderator Ties	**Genealogical Ties**

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Relationship	*Technical Definition*	*Label*
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Subreddits often provide a "directory" of hyperlinks to related subreddits in their sidebar.	Hyperlink Ties	**Indexing Ties**
The subreddit search algorithm provides groups of subreddits relevant to a search keyword.	Shared Keyword Ties	**Algorithmic Ties**

Our Definition of a Multiplex Network

Genealogical ties: undirected, weighted shared moderator ties

Indexing ties: directed, binary ties parsed from hyperlinks in subreddit sidebars

Algorithmic ties: undirected, binary ties representing shared search keywords

Nodes: subreddits

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1. **Keyword search** to find subreddits related to the five countercultures.

Genealogical ties

Indexing ties

Algorithmic ties

117,378 shared keyword ties
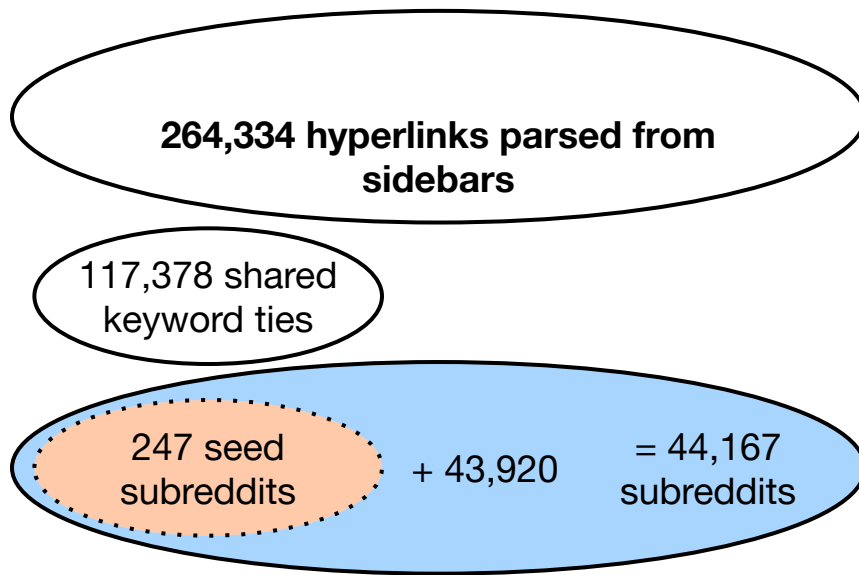
Nodes

247 seed subreddits

Data

2. **Link tracing along hyperlink ties** until we reach a natural boundary.

Genealogical ties

Indexing ties

264,334 hyperlinks parsed from sidebars

Algorithmic ties

117,378 shared keyword ties

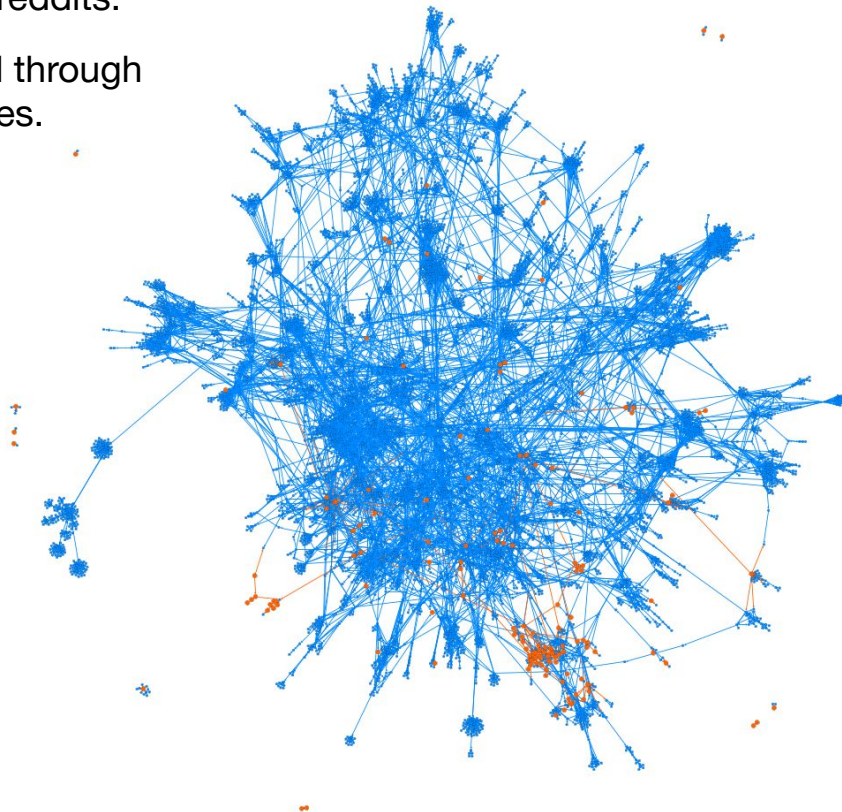**Nodes**

247 seed subreddits + 43,920 = 44,167 subreddits

Seed Subreddits in Indexing Network

Orange nodes are seed subreddits.

Blue nodes were discovered through link tracing along hyperlink ties.

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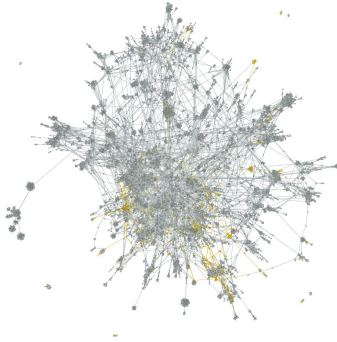# Counterculters in Hyperlink Network
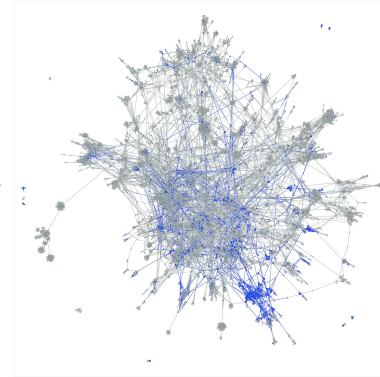
manosphere   **red pill**   **misandry**   **feminism**   **gender minority**

> Hyperlink ties are directed, binary ties.

> Colored nodes are seed subreddits belonging to each counterculture.

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3. **Reconstructing shared moderator ties** between subreddits in our sample**.**

Genealogical ties

14,847 shared moderator ties

Indexing ties

264,334 hyperlinks parsed from sidebars

Algorithmic ties

117,378 shared keyword ties

Nodes

247 seed subreddits   + 43,920   = 44,167 subreddits
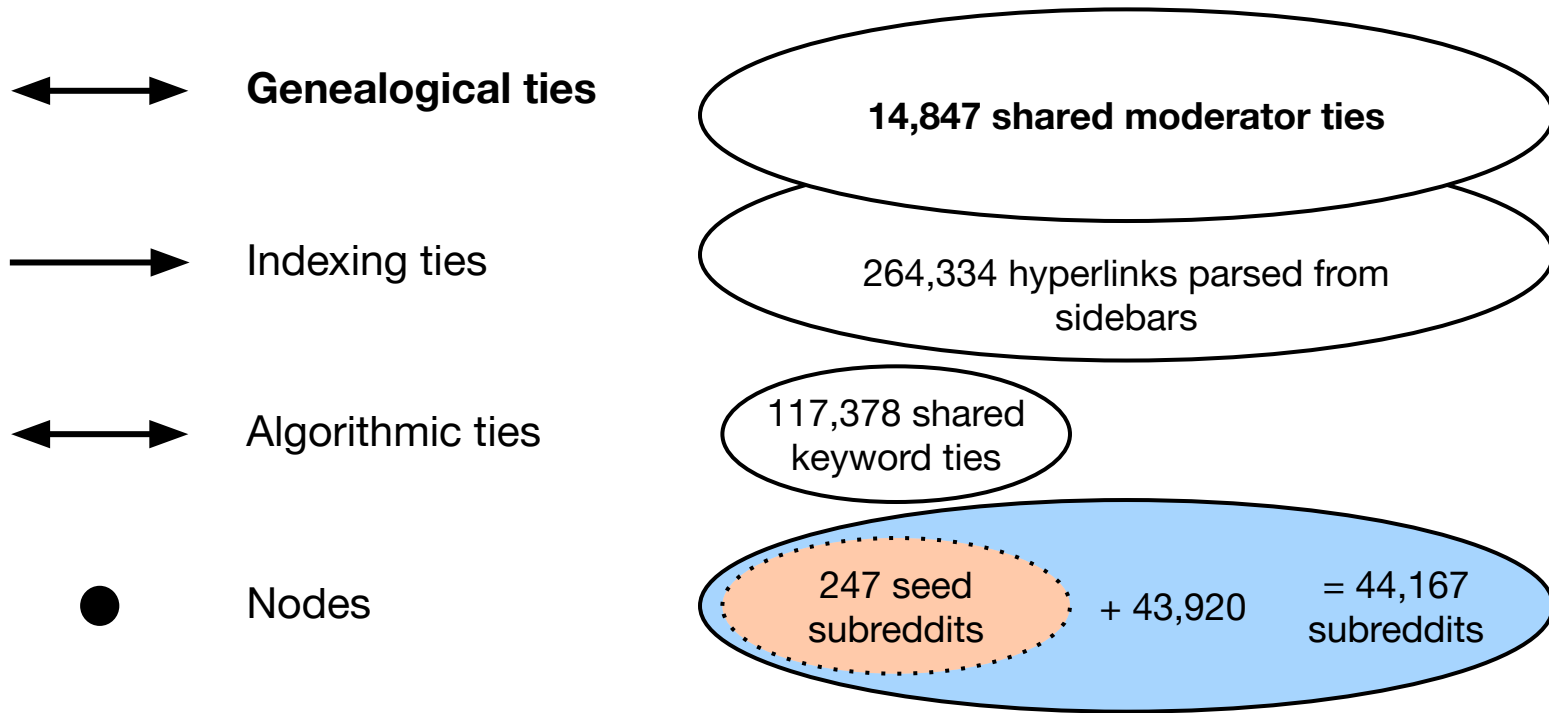
Discursive Themes in Shared Moderator Network

manosphere   **red pill**   **misandry**   **feminism**   **gender minority**

> Shared moderator ties are undirected, weighted ties.

> Colored nodes are seed subreddits belonging to each counterculture.

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RQ 1: How do Reddit users organize social identities?

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Observations from the indexing (hyperlink) layer:

> Edgewise reciprocity and transitivity were significantly *above* the baseline[1].

→ Counterculture subgraphs were cohesive at the dyadic and triadic scale.

[1] Determined with a conditional uniform graph (CUG) test, conditioned on dyad census

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> Subreddit age is positively correlated with with indegree: $\varrho = 0.35$ ($p = 0$).

  → Older subreddits serve as reference points for newer subreddits.

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RQ 2: How can we use networks to preserve ambiguity and nuance in macro-level demographic abstractions?

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   → Gender can't be separated from other cultural dimensions.

> In the conceptual layer, red pill and manosphere subreddits are at the core.

   → Red pill and manosphere subreddits are key sites of cultural production.

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RQ 3: Do genealogical and algorithmic relationships align with crowd-assembled structures?

Theme	Hyperlink Odds Given Shared Moderator Tie
Manosphere	8,200***
Red Pill	380***
Misandry	71***
Feminism	1,200***
Gender Minority	6,500*

Observations:

> Odds of a hyperlink tie given a **shared moderator** tie are significantly *above* the baseline (compared to absence of the shared moderator tie)[1].

[1] Significance determined using Hubert's QAP.

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RQ 3: Do genealogical and algorithmic relationships align with crowd-assembled structures?

Theme	Hyperlink Odds Given Shared Keyword Tie
Manosphere	1.2***
Red Pill	1.2***
Misandry	1.1***
Feminism	1.2***
Gender Minority	1.3***

Observations:

> Odds of a hyperlink tie given a **shared keyword** tie are significantly *above* the baseline (compared to absence of the shared keyword tie)[1].

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Summary

We identified five **gender countercultures on Reddit**.

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We identified five **gender countercultures on Reddit**.

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We found:

> Gender identities develop **in relation** to each other.

> Gender is **inseparable** from the broader cultural context.

> **Genealogical ties** are key to how gender is understood on Reddit.

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> **Genealogical ties** are key to how gender is understood on Reddit.

Future work will examine how we can use networks to overcome the limits of "flat" gender categories.

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