

# Diversity is too important to be left to women

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ACCU 2022, April 7 Computer Science, Aberystwyth University  
BCSWomen

Intro  
●oooooooo

Why  
oooooooooooo

Don't do this  
ooooo

Do do this  
oooooooooooo

Conclusions  
oooo

# Outline

1 Intro

2 Why

3 Don't do this

4 Do do this

5 Conclusions

# What gives me the right to talk about this stuff?

- Is woman
- Is technical
- Has read loads of books and articles
- On the committee of BCSWomen since 2007
- Started the UK's first conference for women undergrads<sup>1</sup>

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<sup>1</sup><https://bcswomenlovelace.bcs.org/>

# What are you going to get out of this talk?

- An introduction to a bunch of diversity related concepts and terms
- Some ranty stuff
- Some practical suggestions of things you can do

# Karen Spärck Jones



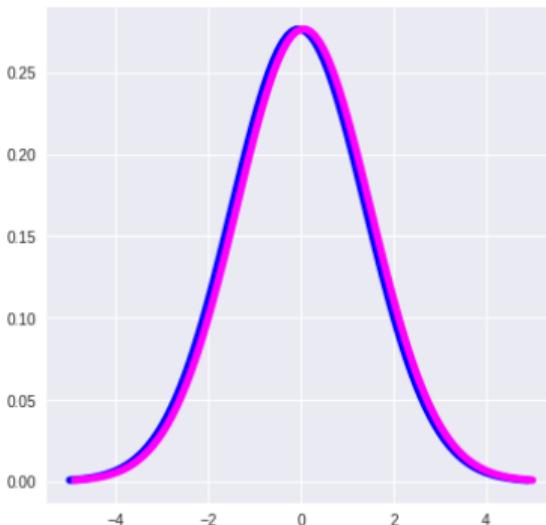
“Computing is too important to be left to men”

2007

University of Cambridge, CC BY 2.5

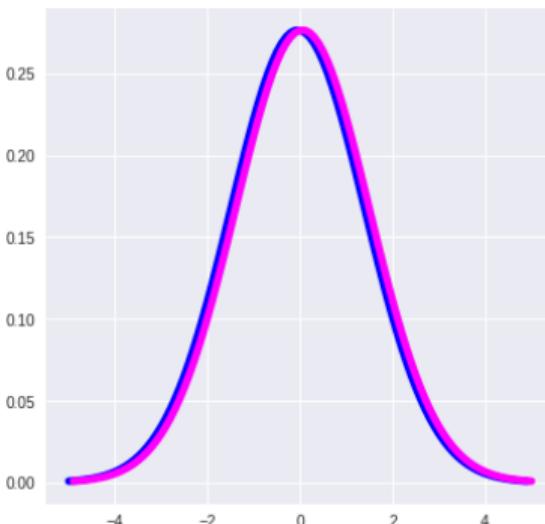
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Wikimedia Commons

# The problem of talking about diversity



Men are from mars, women are from venus

# The problem of talking about diversity



~~Men are from mars, women are from venus~~

People are from earth

# General → Specific → General

It is simultaneously possible for there to be ...

- very little evidence of gender differences in technical ability
- some exceptionally talented guys
- some really useless women

The plural of anecdote isn't data

Intro  
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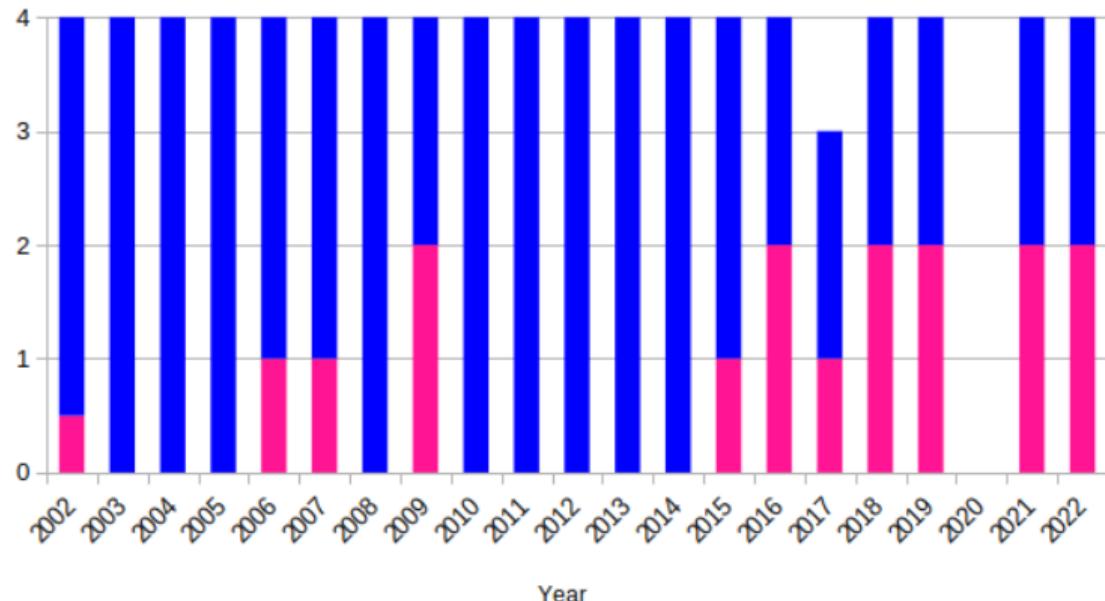
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# We've come a long way baby



# So isn't diversity in tech a solved problem?

**Figure 1.4 Female representation by IT occupation, 2019 (five-year average). Figures from the Office for National Statistics show that women cluster in IT operations, in project management and in web design, but are very under-represented as IT engineers, directors and possibly even coders** (Source: BCS, 2020a)



Source: Women in Tech: A practical guide to increasing gender diversity and inclusion, BCS Publishing  
<https://shop.bcs.org/store/221/detail/workgroup?id=3-221-9781780175614>

# Diversity in tech isn't just gender

When there's one clear majority group in a profession, that dominant group's characteristics tend to dominate the profession. Sociologists talk about "**Gender role spillover**" wrt gender imbalances

Gender is one of the easier characteristics to measure.

Age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation. Also, class.

It's harder to point to a norm, but we need to think about these and also about **intersectionality**.

Intro

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# The business case for diversity...

... is well-made in a lot of places, recently Financial Reporting council (FRC), 2021, FT350:

More gender diversity generally means

- better financial performance
- less shareholder dissent
- more decentralisation in operational practices
- more consensus
- less overconfidence

[https://www.frc.org.uk/getattachment/3cc05eae-2024-45d8-b14c-abb2ac7497aa/  
FRC-Board-Diversity-and-Effectiveness-in-FTSE-350-Companies.pdf](https://www.frc.org.uk/getattachment/3cc05eae-2024-45d8-b14c-abb2ac7497aa/FRC-Board-Diversity-and-Effectiveness-in-FTSE-350-Companies.pdf)

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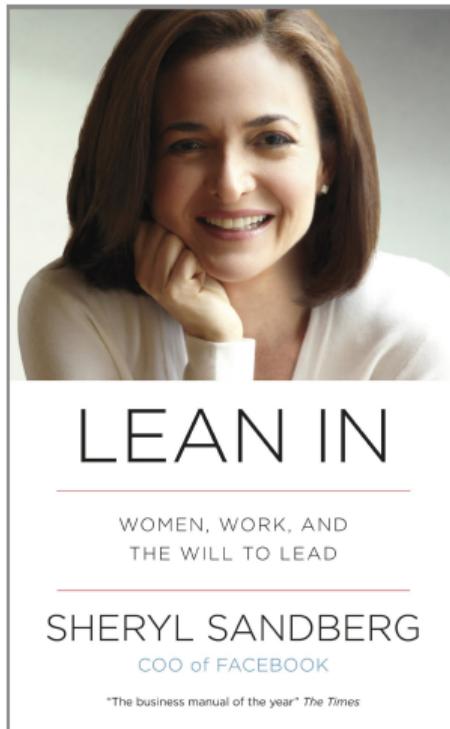
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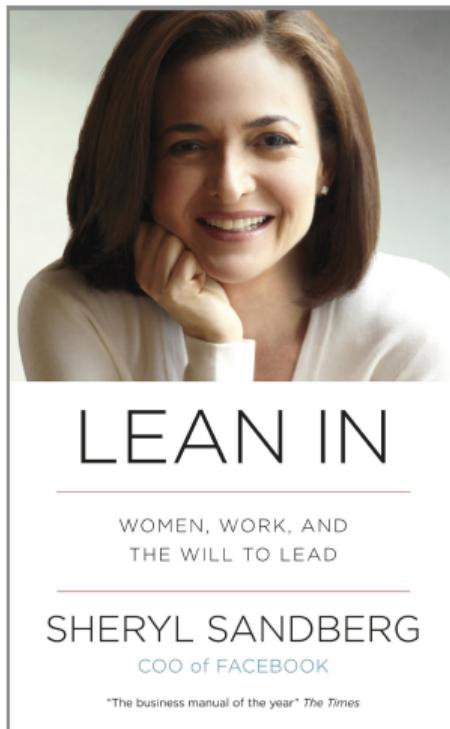
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# Business motivation

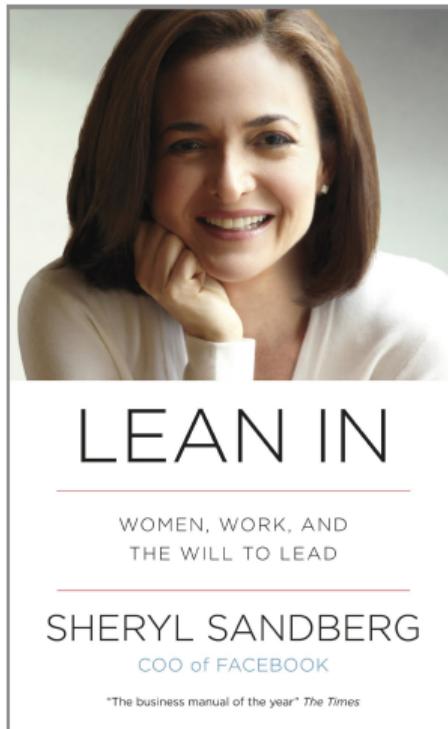


# Business motivation



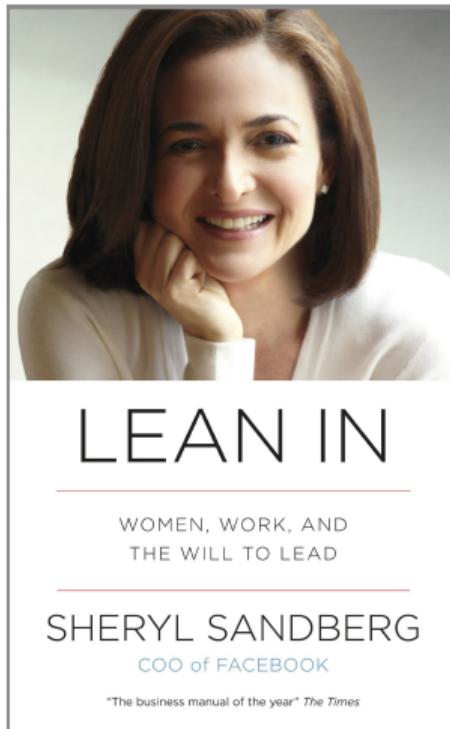
- Lean In

# Business motivation



- Lean In
- Lean Out

# Business motivation



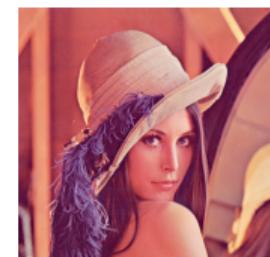
- Lean In
- Lean Out
- Lean sideways?

# We design better tech when we consider all the users.

- Why are Alexa, Cortana and Siri all female voices?
- Why have health tracking apps only just started to consider periods?
- Voice recognition systems don't work as well with female voices
- Face recognition systems don't work as well with Black faces
- Why is the first option for gender nearly always Male?
- Why do forms still insist gender is binary?

# The default male

- “If you ask a software engineer what version control they use, he'll say bitbucket.”
- “Here come the beards” (sorry!)
- It's not just tech. Caroline Criado Perez has done a lot of work highlighting this across all fields<sup>a</sup>
  - Even nonexistent faces perceived through pareidolia are more likely to be male <sup>b</sup>



<sup>a</sup>Her newsletter is great: <https://carolinecriadoperez.com/>

<sup>b</sup>No, really: <https://doi.org/10.1073/pnas.2117413119>

# Pink it and shrink it



# Sense of belonging

- Ever been the only X in the room ?

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- Ever been told you're a good role model?

If people do not perceive themselves as belonging in a field, then they're not motivated to join it in the first place, or stay in it.

# Stereotype threat

When people are primed to think of themselves as part of a group which is associated with a stereotype, they perform in a way which is more conforming to the stereotype.<sup>2</sup>

This effect has been shown in 300+ studies across a lot of different domains

- Gender
- Race
- Socioeconomic group
- Age

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<sup>2</sup>See e.g. <https://dx.doi.org/10.1371/journal.pone.0146487>

# Self efficacy

How effective people think they're going to be at a task influences all sorts of aspects of their performance.

There are gender differences in self-efficacy (even?) when controlling for ability<sup>3</sup>

- Higher self-efficacy leads to better problem solving (less likely to reject correct hypotheses prematurely)
- Self-efficacy levels influence choice of task
- Self-efficacy levels influence enjoyment of tasks
- Self-efficacy levels influence what jobs you apply for

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<sup>3</sup>See e.g. <https://link.aps.org/doi/10.1103/PhysRevPhysEducRes.14.020123>

# Micro aggressions

Leaving aside the macro aggressions (for now) . . .

The term microaggression makes it seem unimportant

- Hearing demeaning remarks about you
- Being mistaken for someone at a lower level
- Needing to provide more evidence of your competence
- Having your contributions ignored

# Being in a minority isn't fun

- Ever been asked to make the tea?

# Being in a minority isn't fun

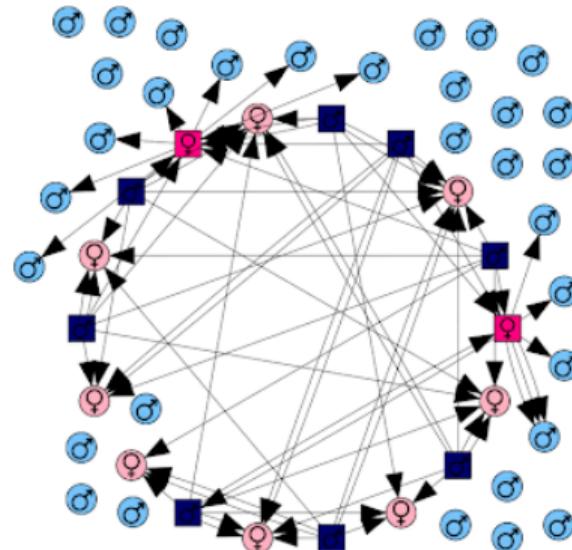
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- Ever been asked if you can put someone through to the boss?

# Being in a minority isn't fun

- Ever been asked to make the tea?
- Ever been asked if you can put someone through to the boss?
- Ever been assumed to be in sales?

But is it inevitable?

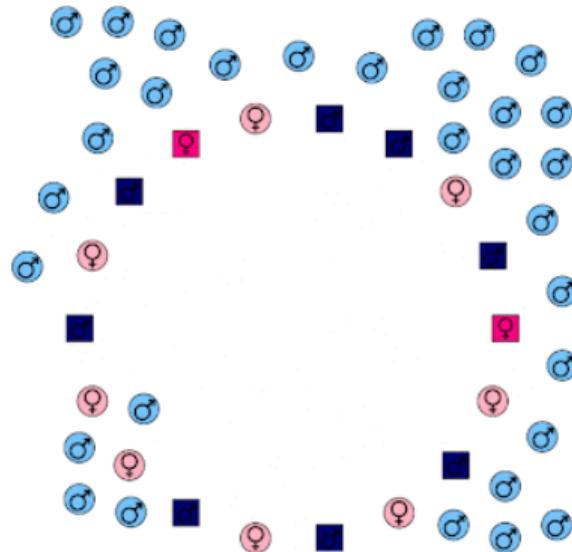
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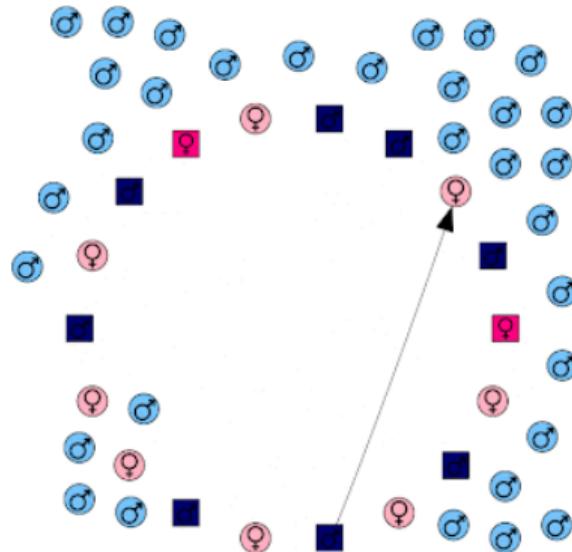
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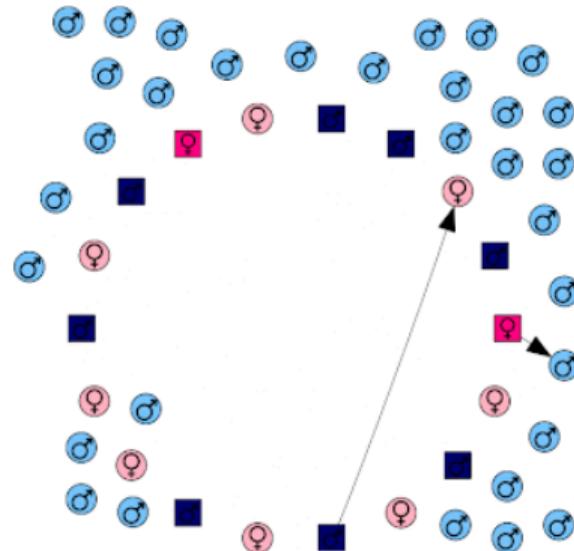
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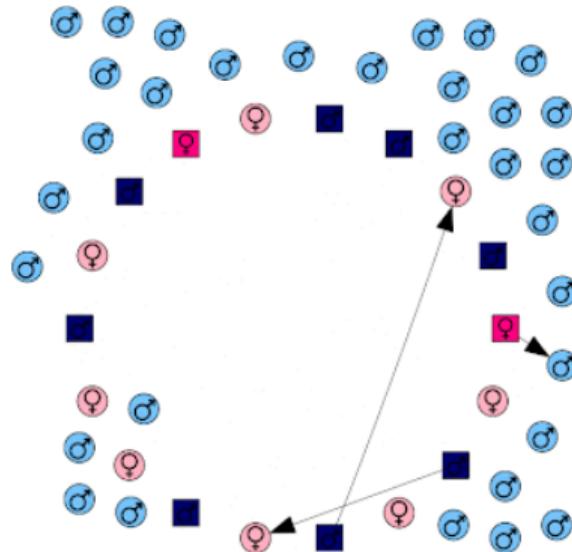
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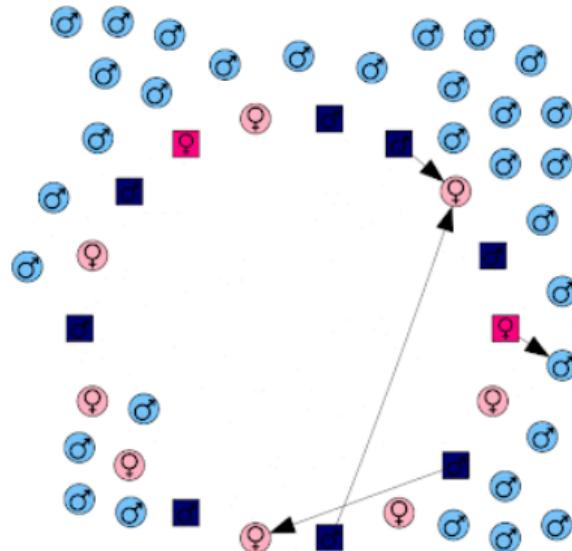
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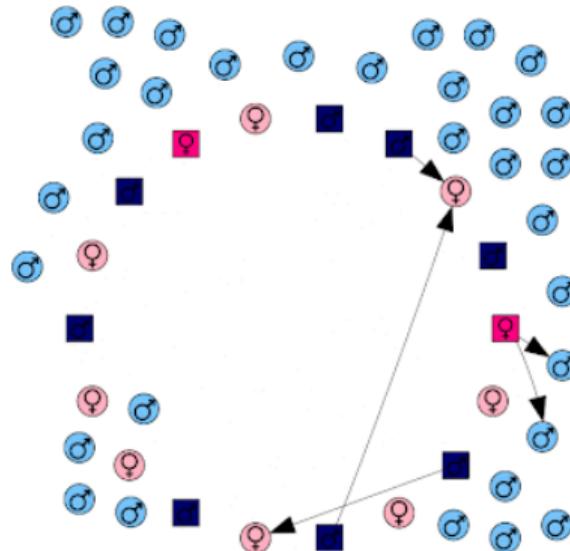
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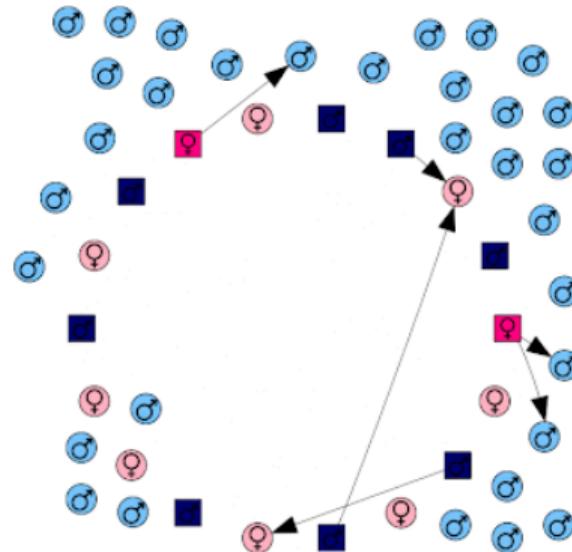
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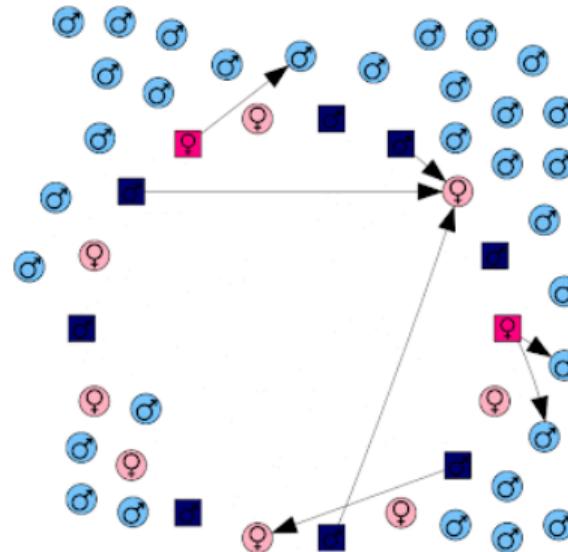
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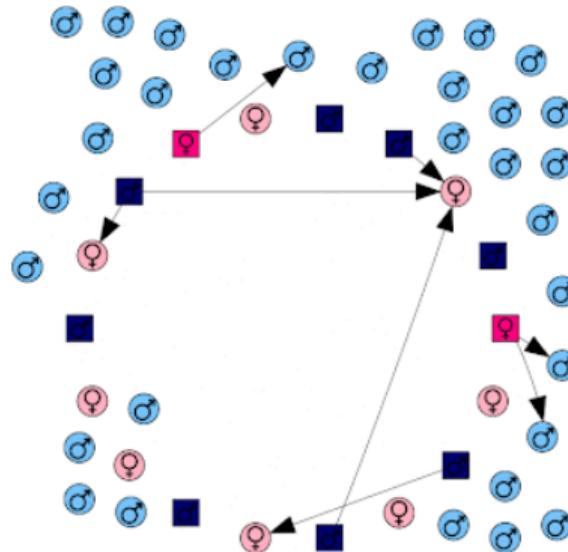
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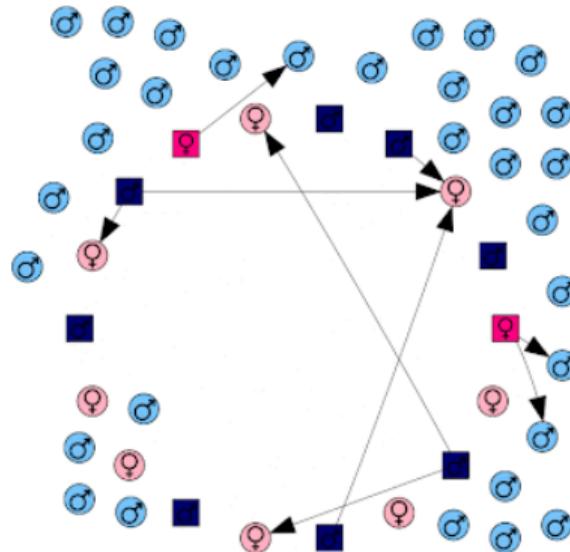
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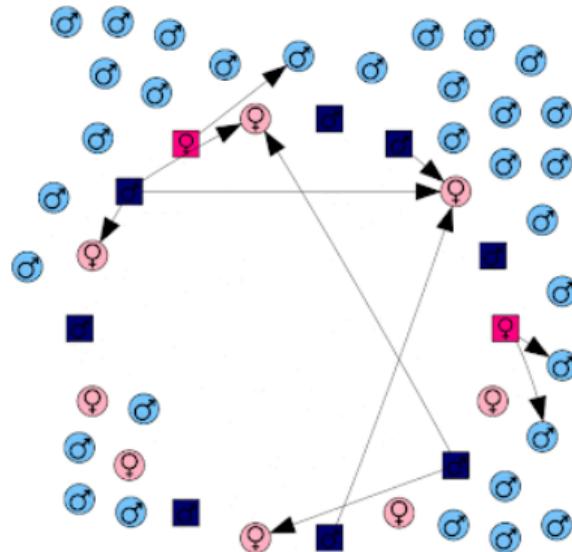
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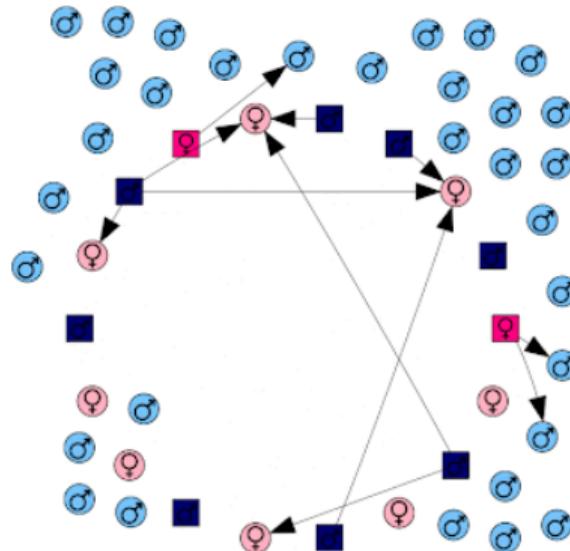
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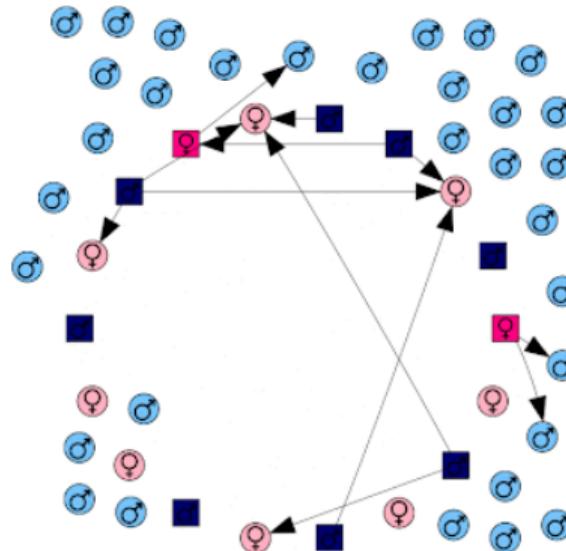
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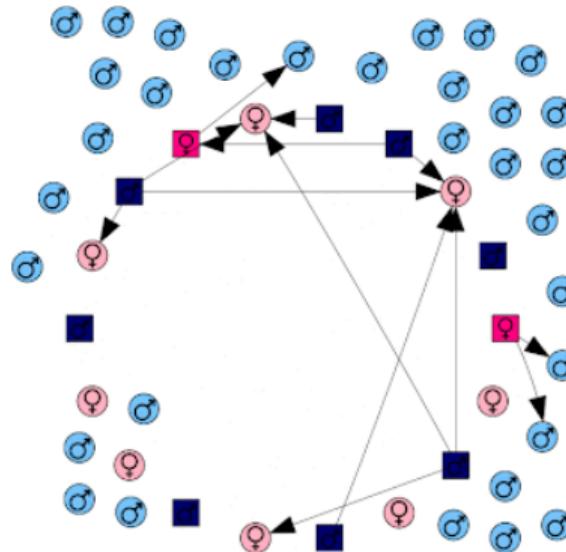
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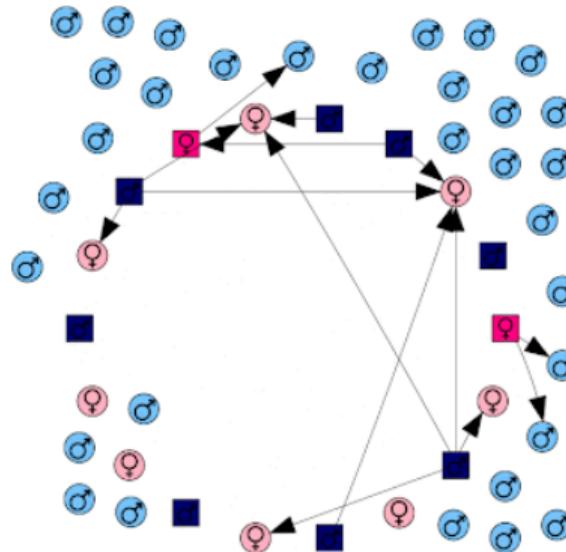
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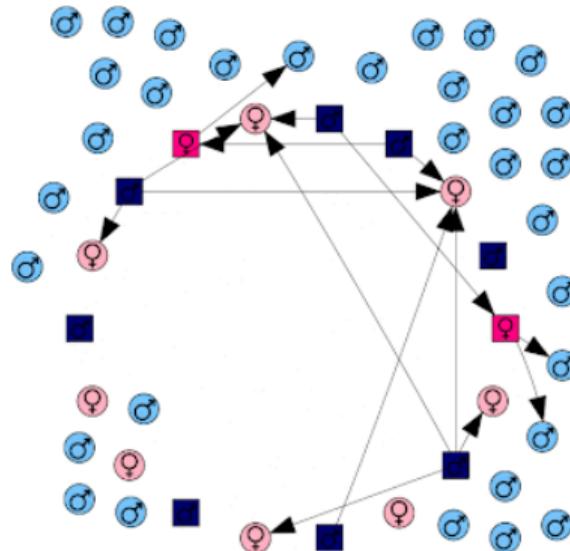
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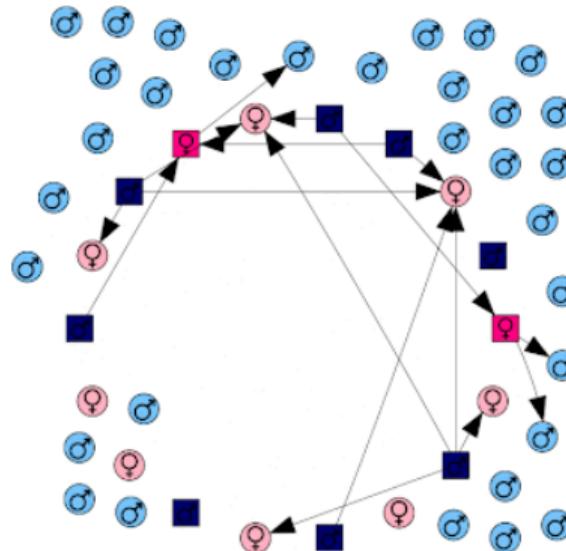
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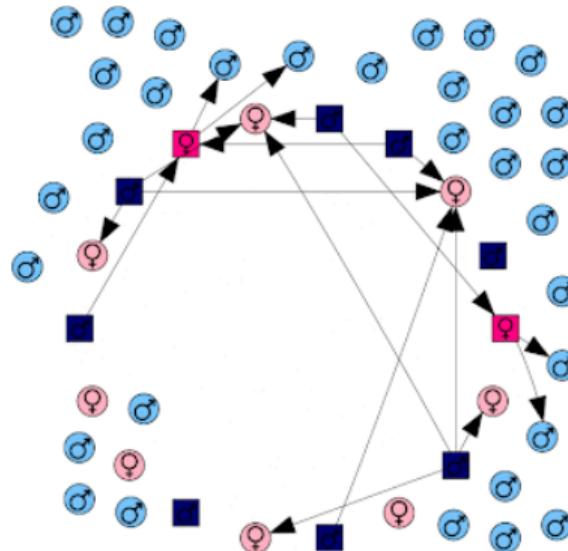
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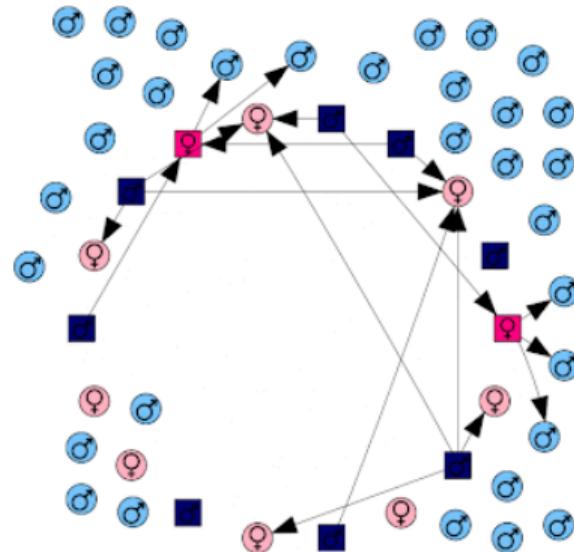
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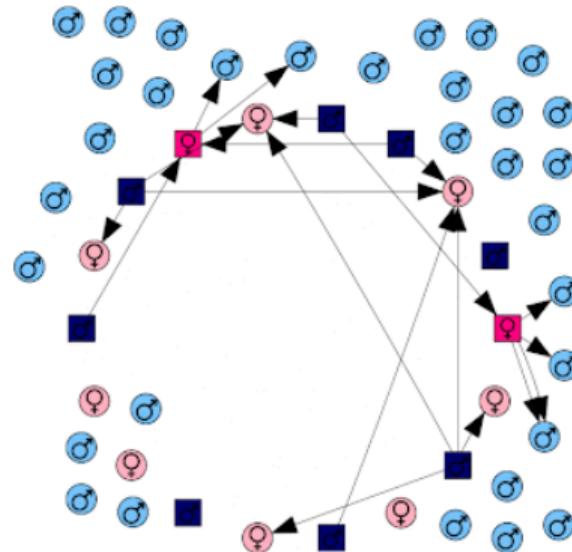
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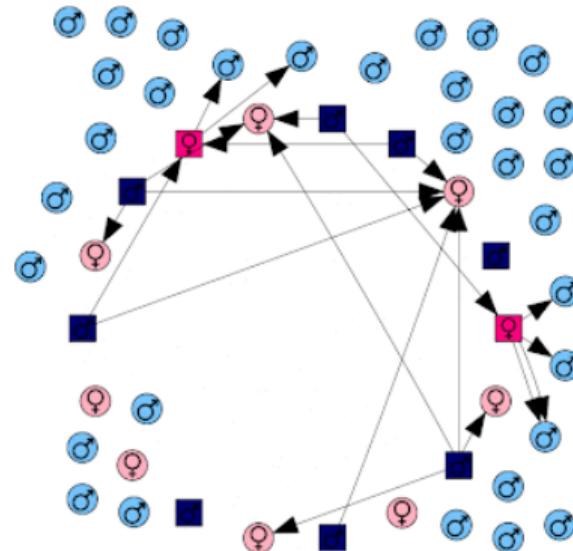
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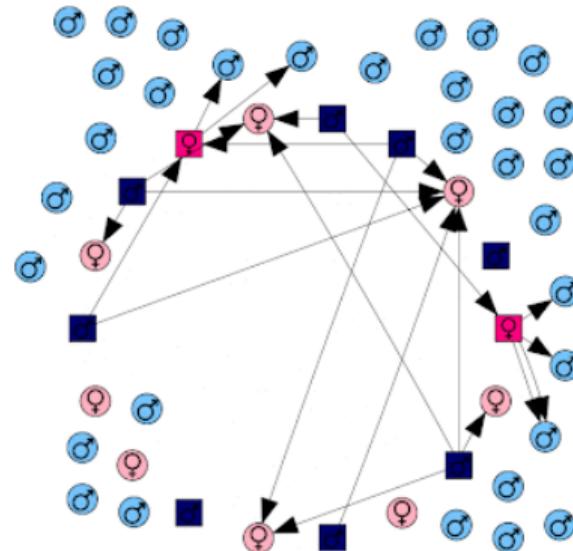
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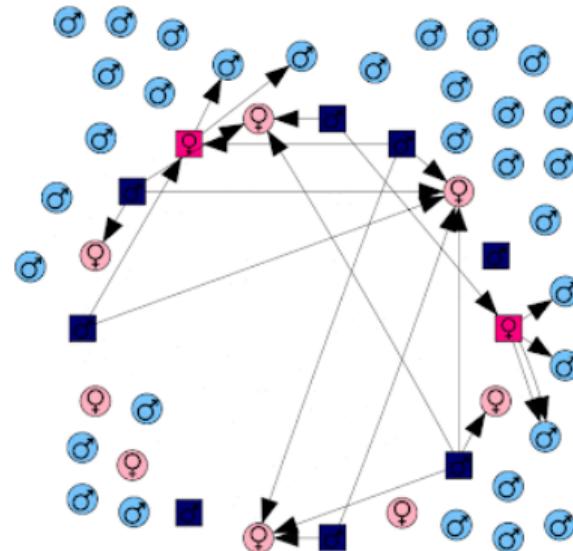
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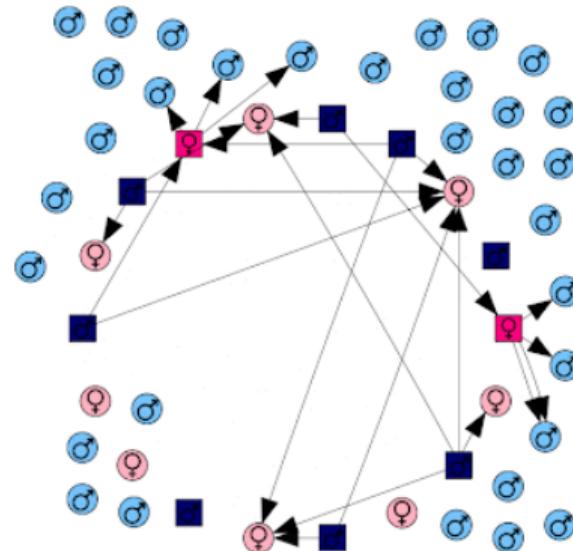
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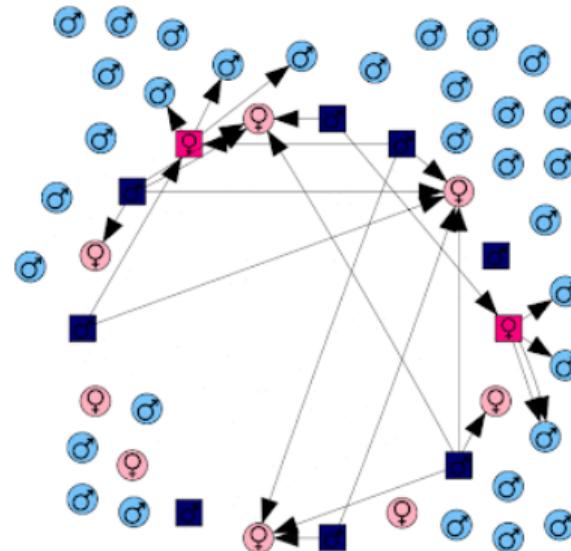
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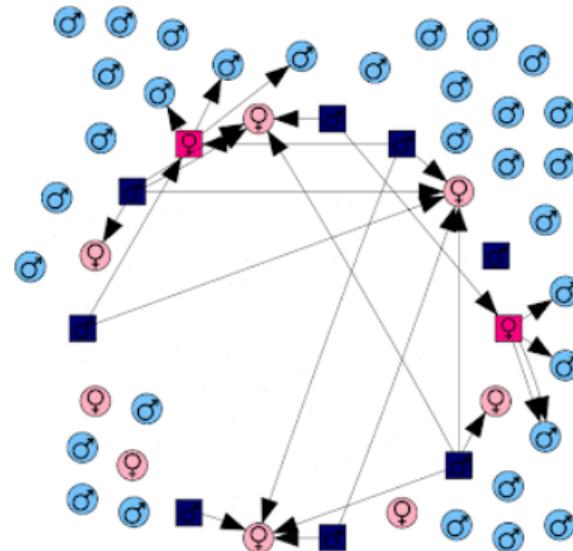
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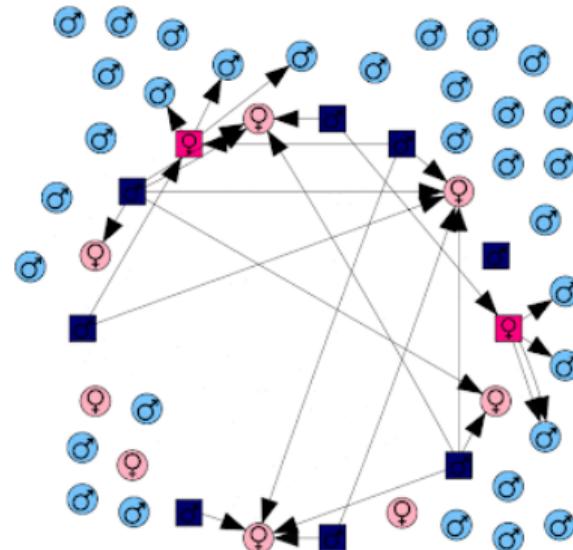
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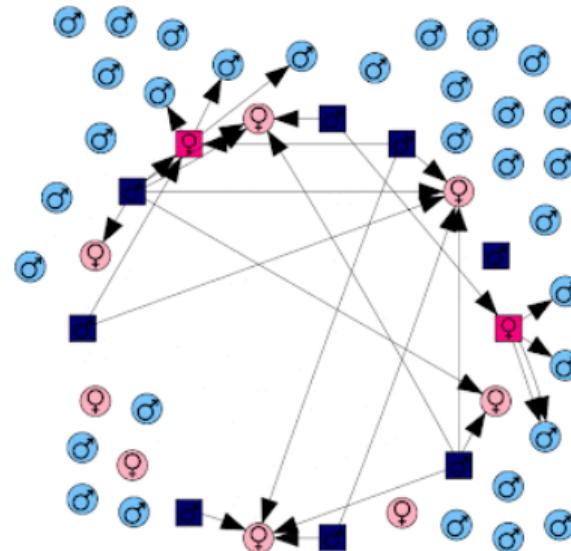
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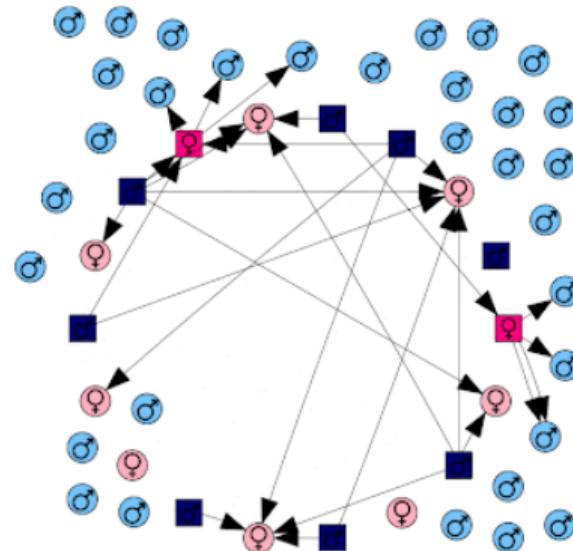
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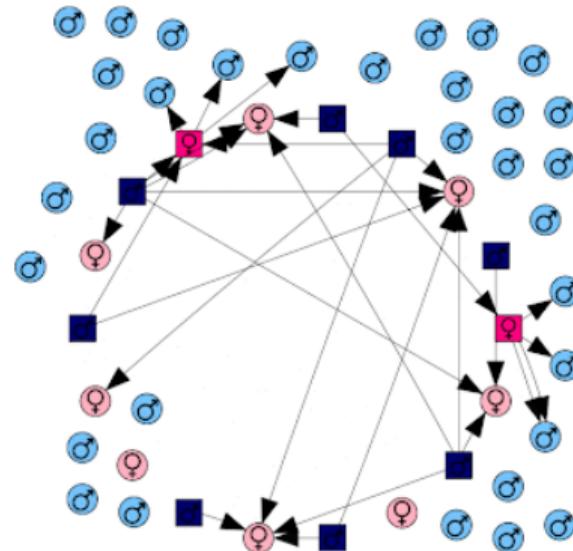
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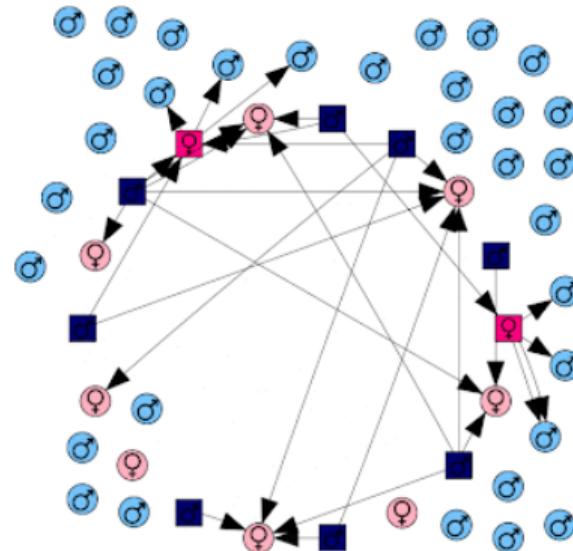
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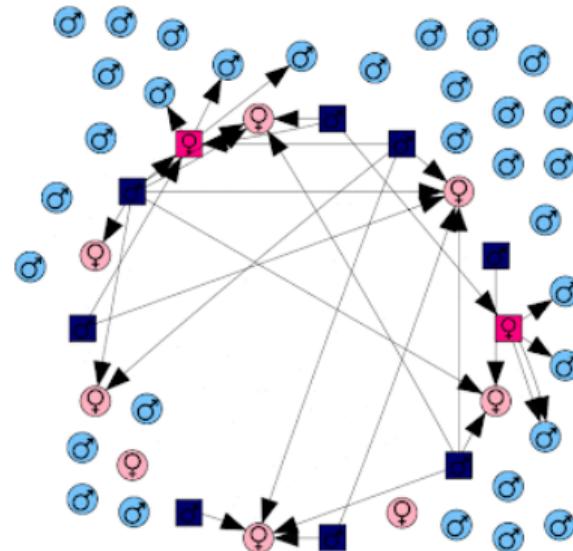
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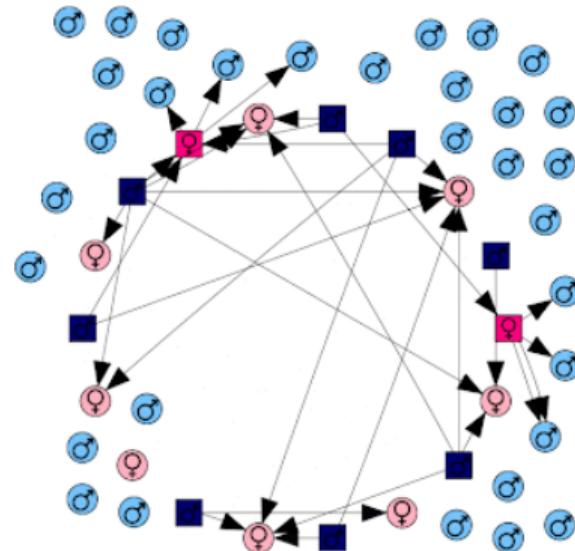
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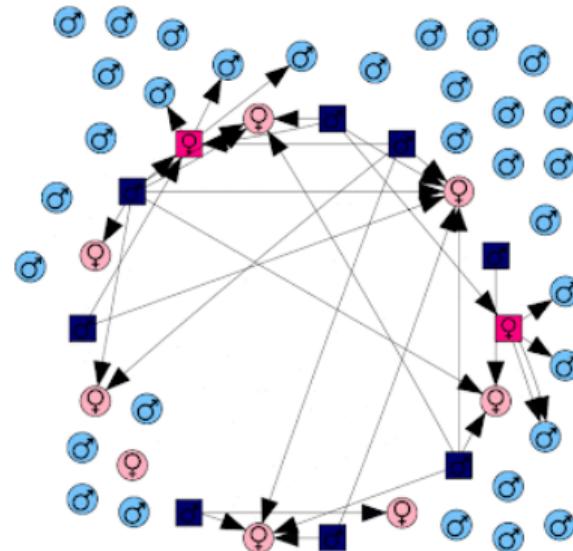
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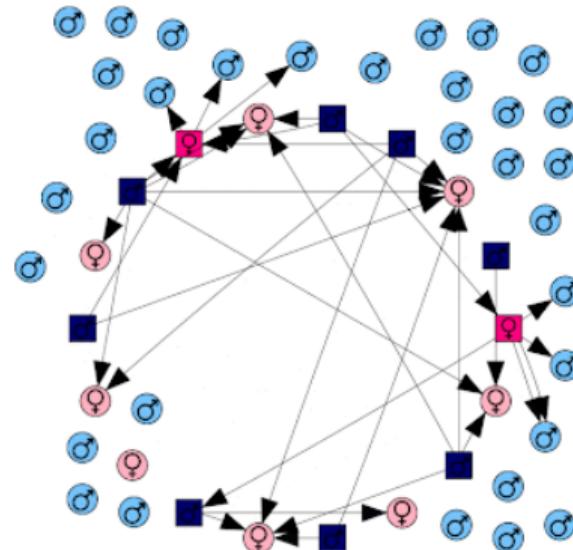
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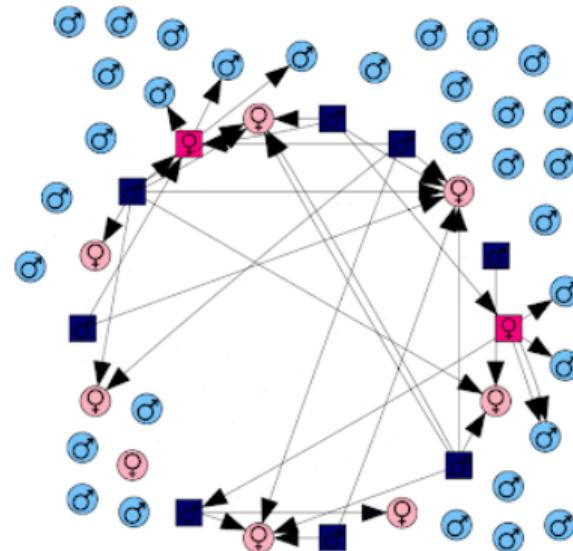
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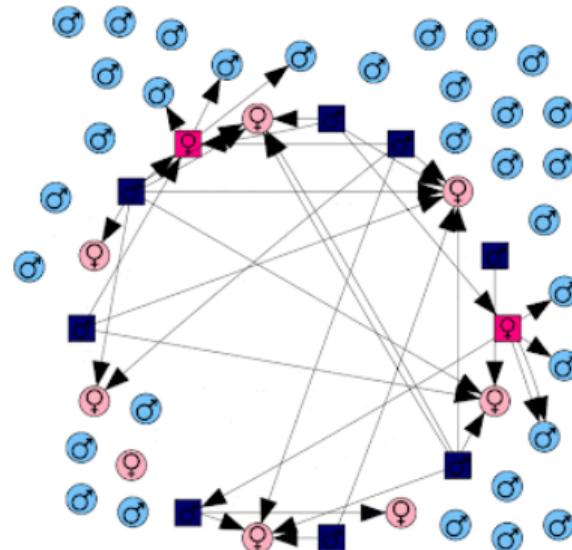
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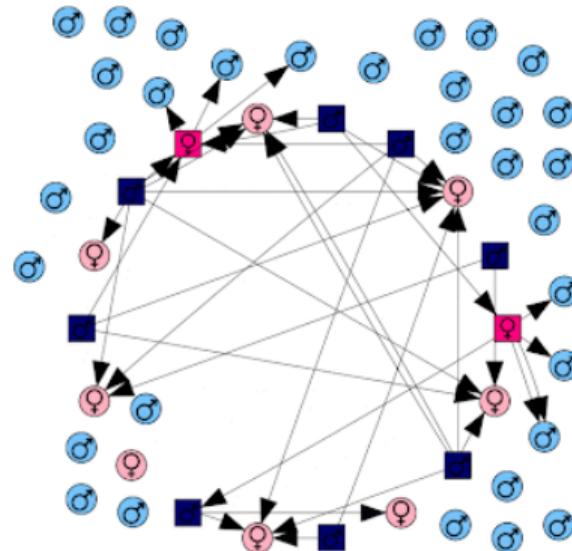
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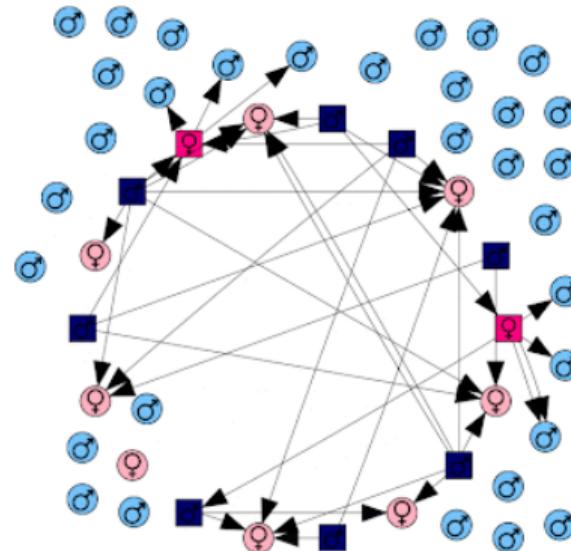
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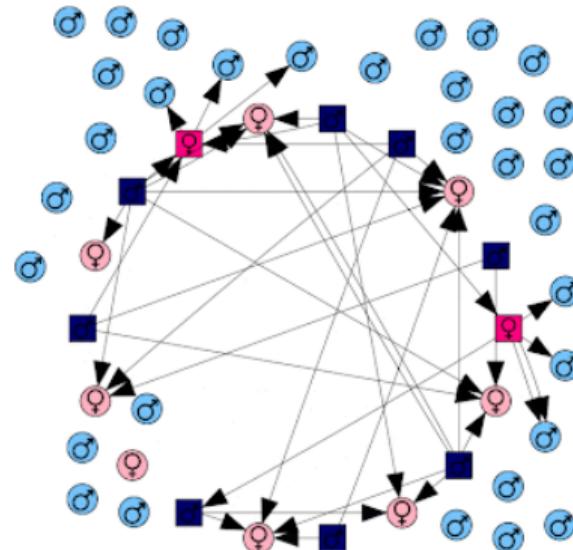


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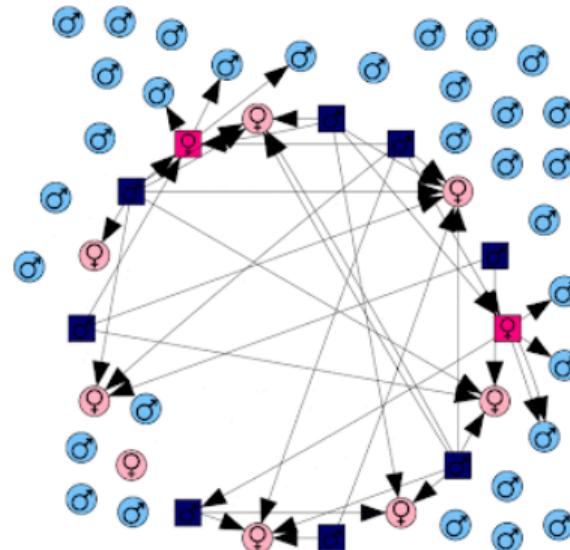
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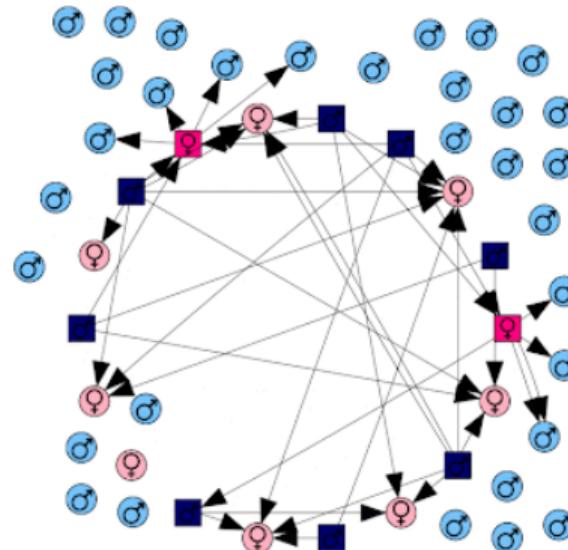
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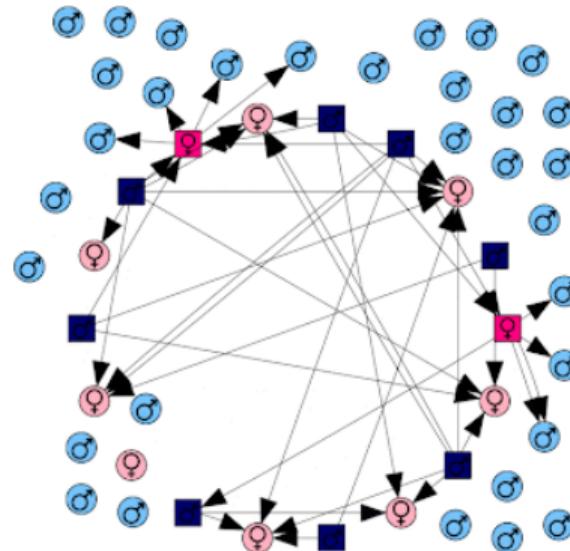
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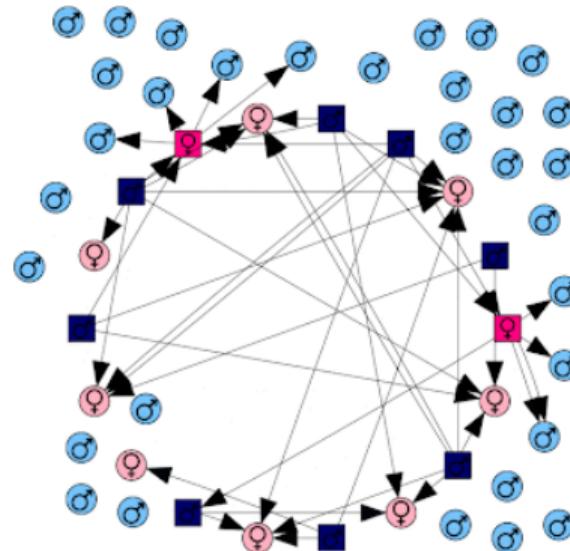
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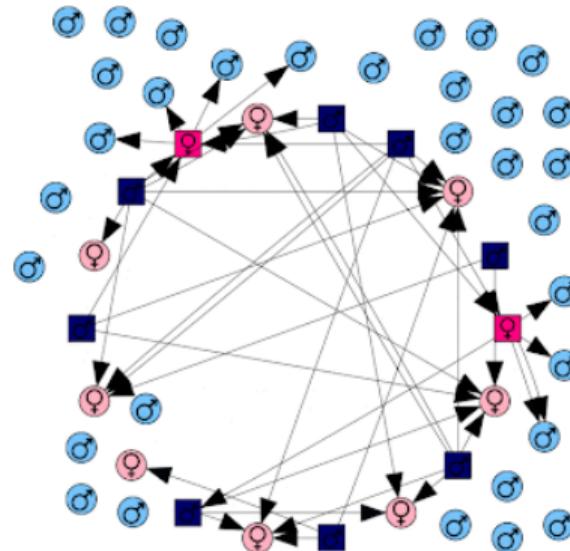
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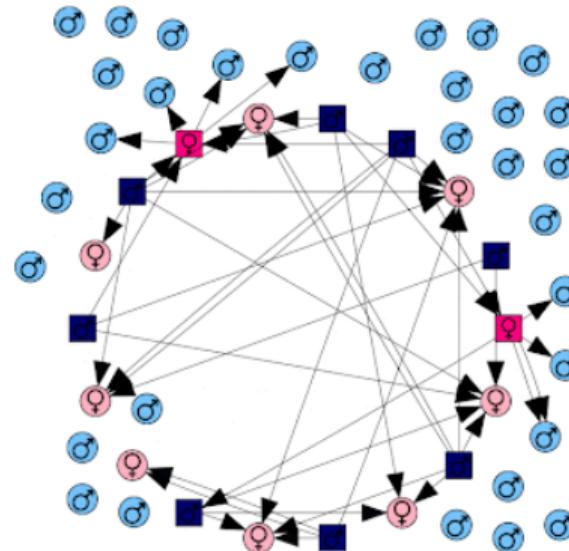
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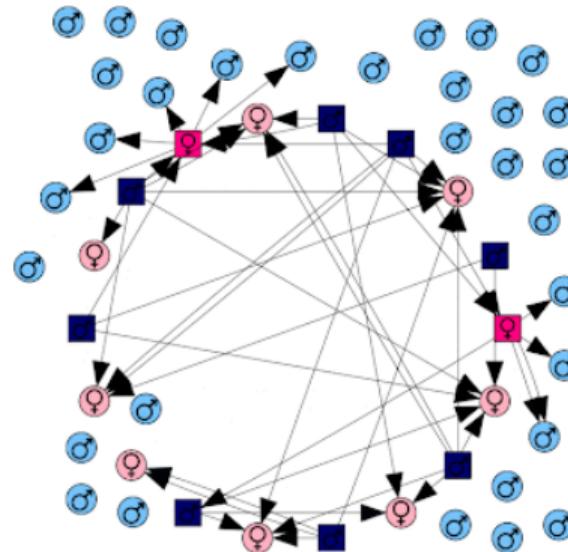
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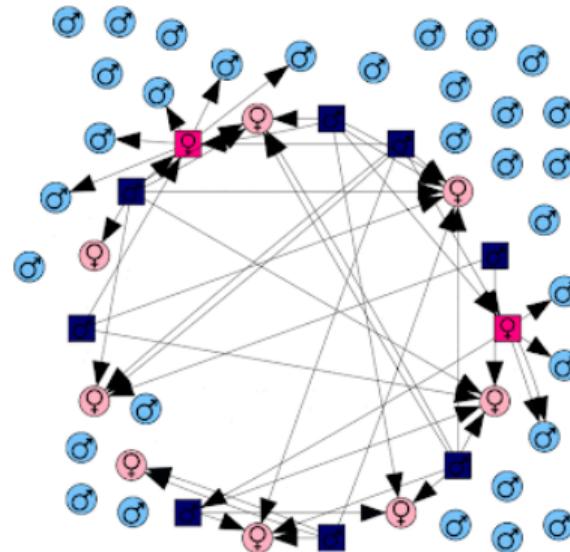
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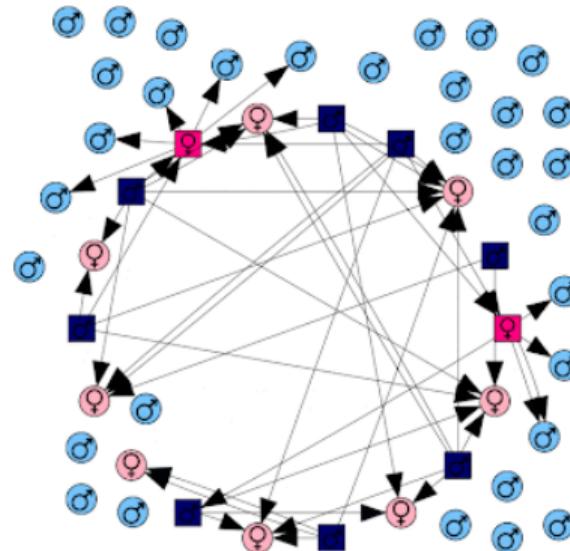
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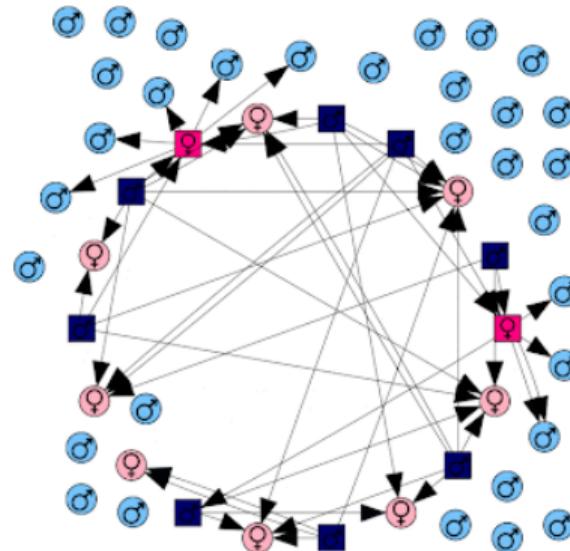
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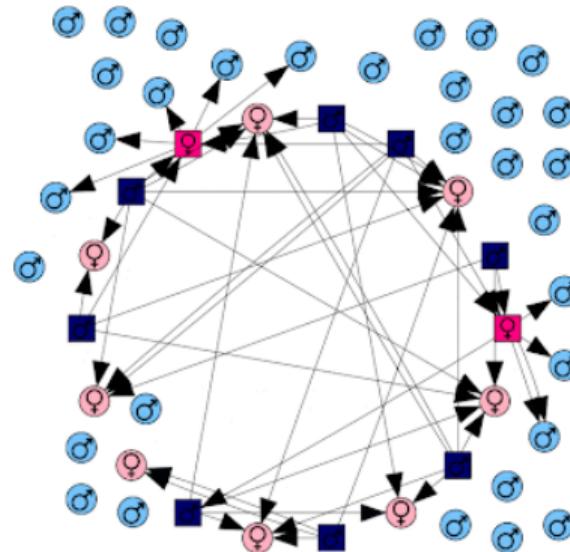
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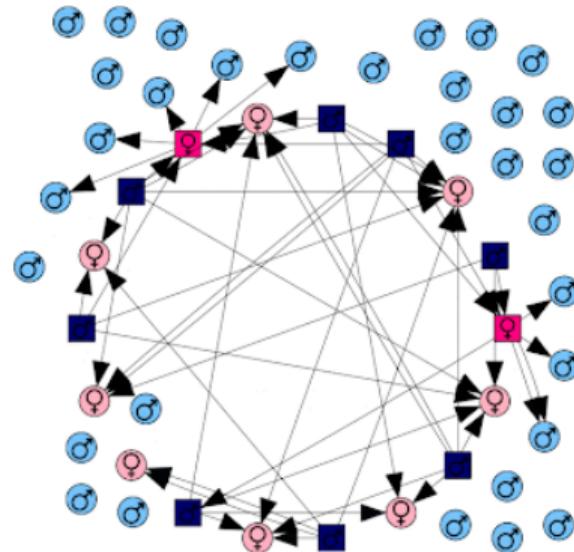
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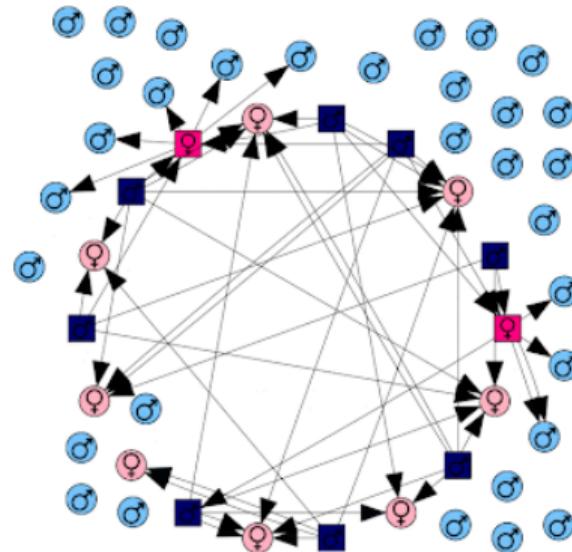
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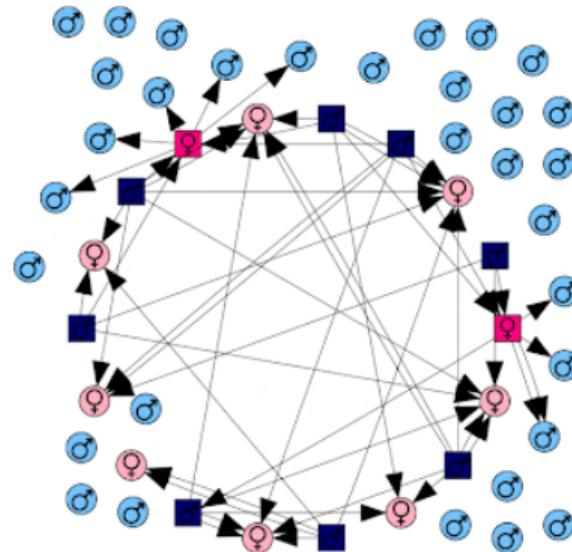
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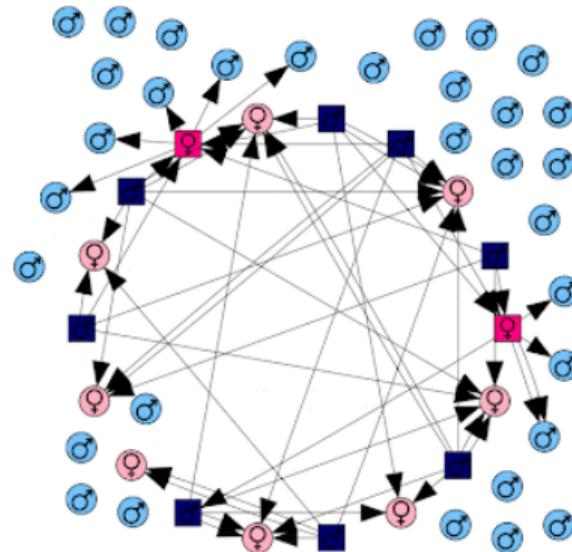
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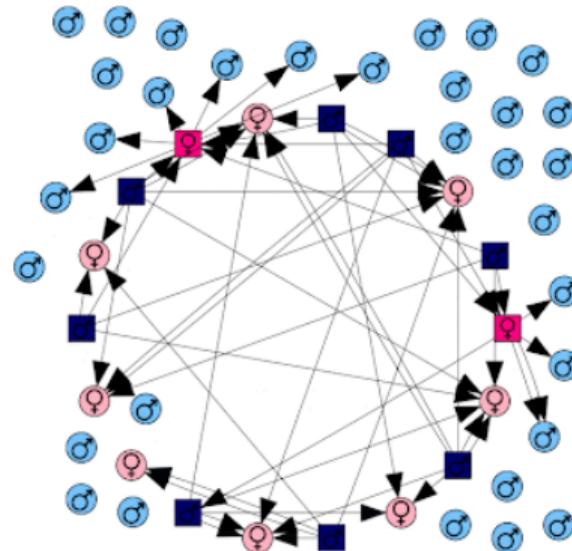
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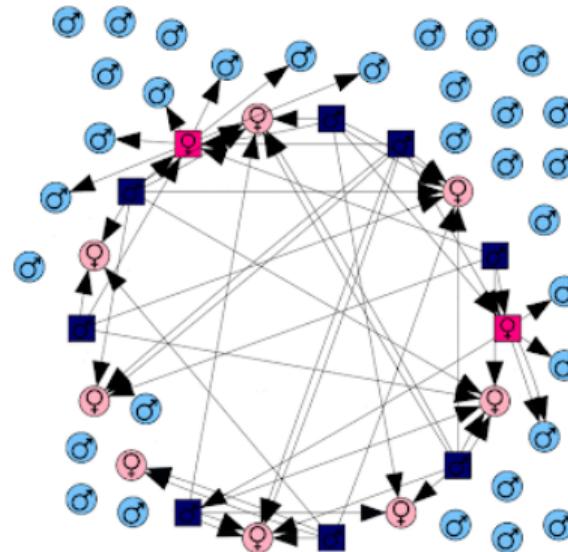
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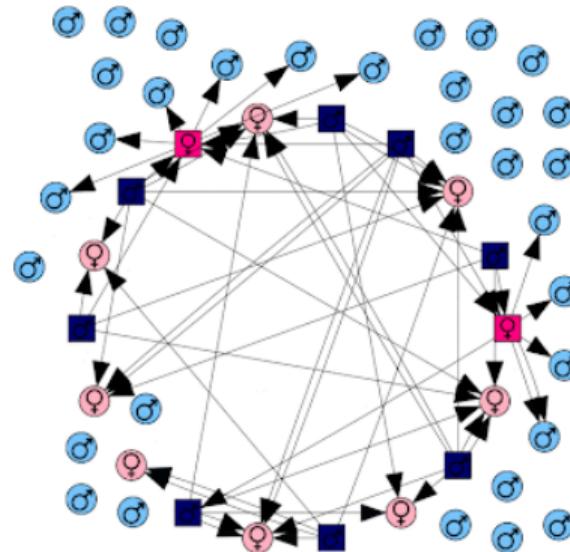
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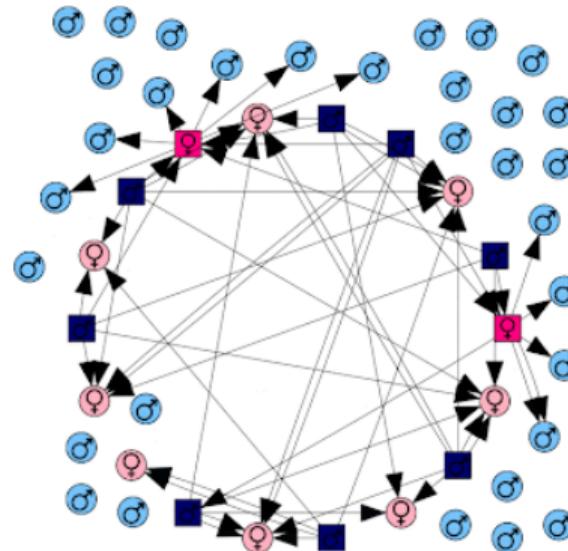
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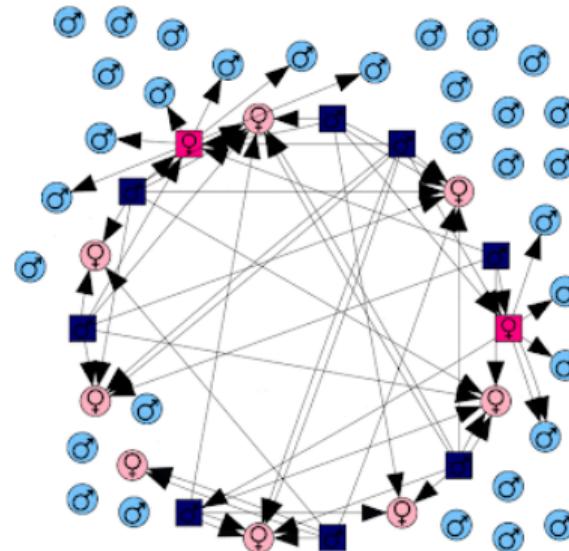
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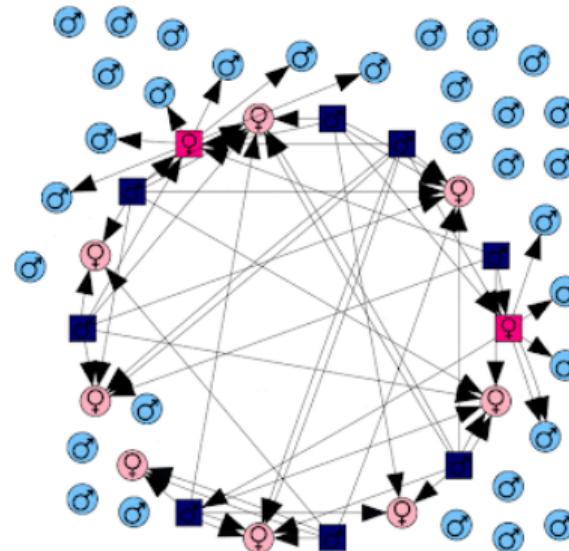


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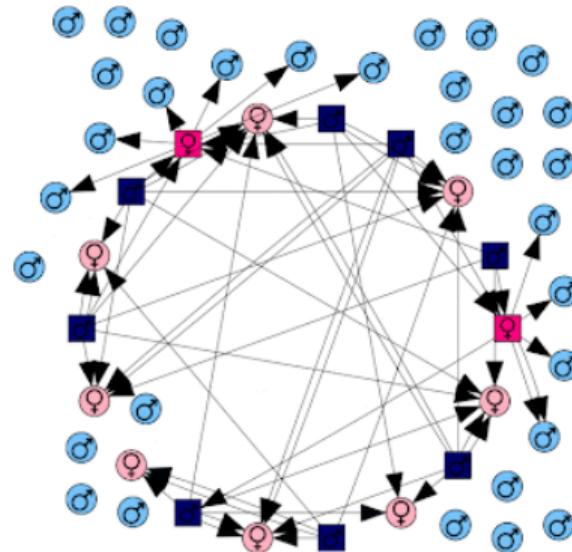
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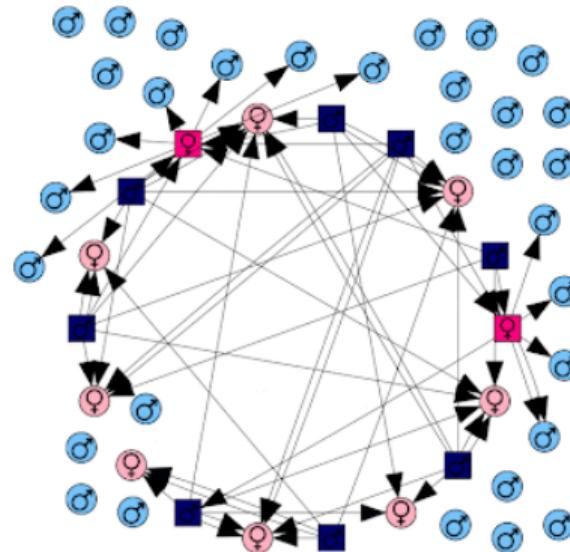
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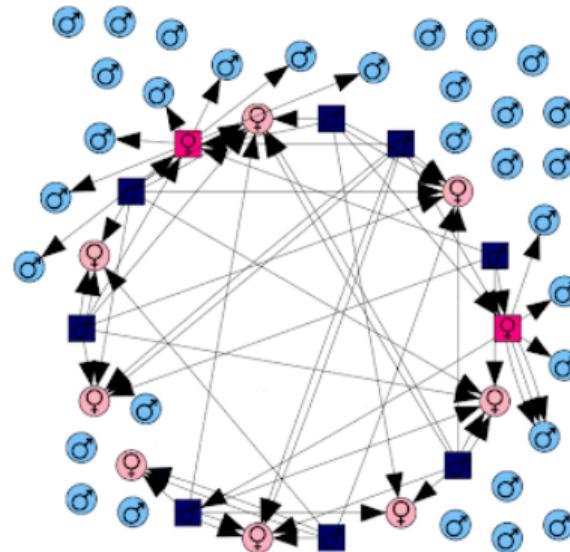
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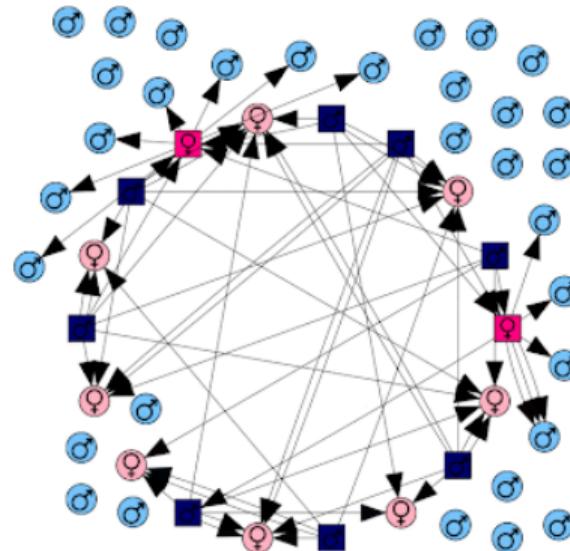
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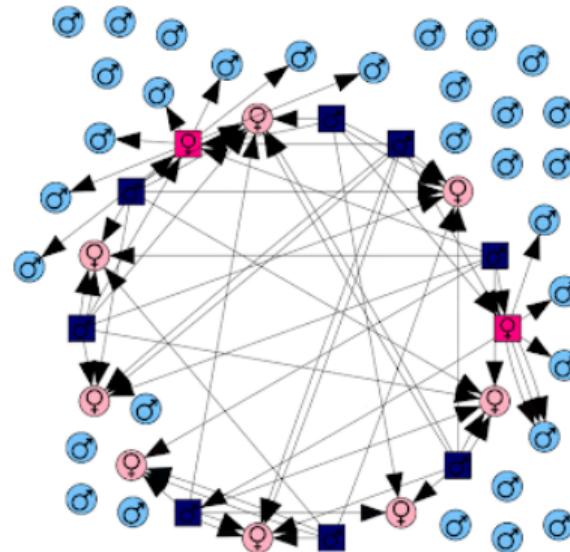


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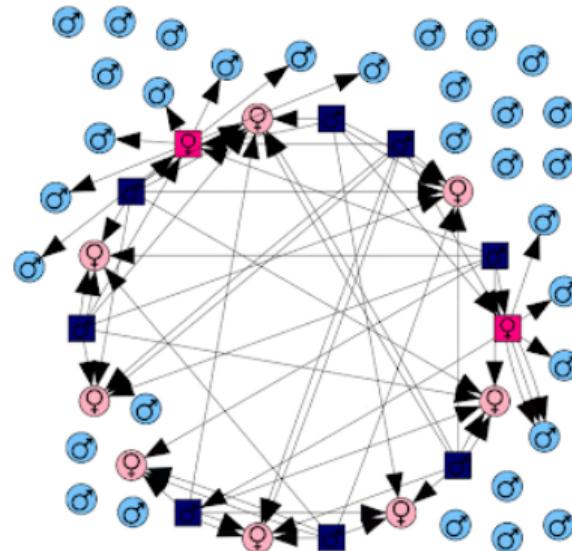
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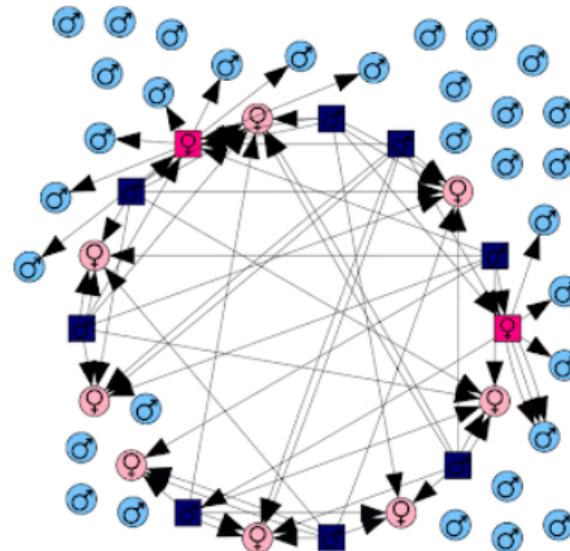
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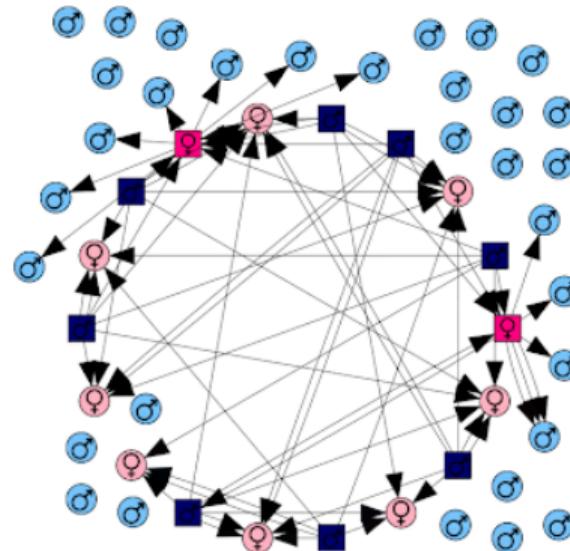
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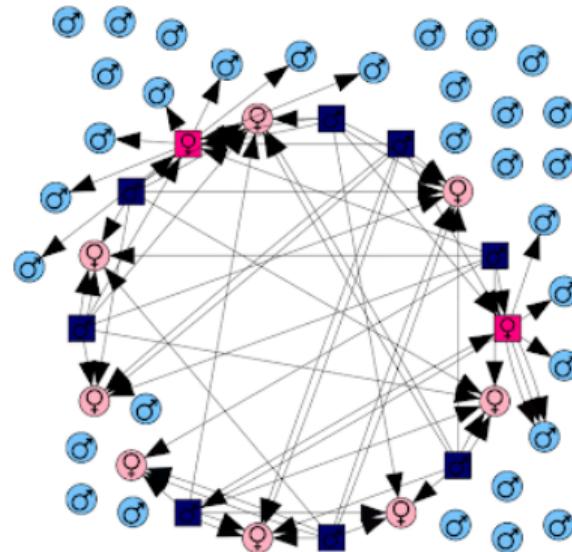
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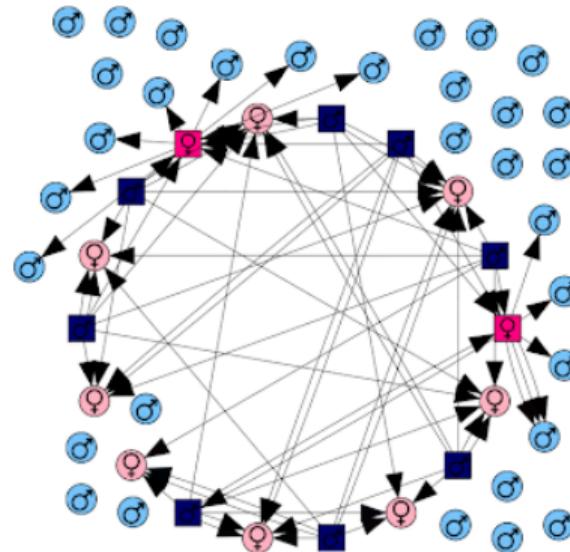
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# What does Petrie tell us?

- Assuming 20% women the gender ratio is 1:4.
- There are 4 times as many men so 4 times as many microaggressions are made to women as to men.
- There are also 4 times fewer women available to target, so each individual woman is four times as likely to receive a given remark than an individual man is.
- Therefore: women get 16 times the number of microaggressions.
- This holds: with a gender ratio of  $1 : r$ , women will receive  $r^2$  times as many microaggressions as men.

# Diversity tax

- There are some extra things which women do because they are in a minority in tech
- There are some extra things which women do because women are more likely to do some kinds of task

Intro

oooooooooo

Why

oooooooooooooo

Don't do this

●oooo

Do do this

ooooooooooo

Conclusions

oooo

# Outline

1 Intro

2 Why

3 Don't do this

4 Do do this

5 Conclusions

# Don't be that guy

I'm not going to link to any of the many (many (many)) cases of sexual harassment at tech conferences and in tech companies. Or any of the cases on online harassment.

Just don't.

# Don't hold women and minorities to a higher standard

- Women shouldn't have to prove their technical credentials
- Gate keeping is sometimes useful but more often exclusionary
- This applies to women as well as men:
  - There is evidence that women apply for jobs when meeting more of the criteria<sup>5</sup>

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<sup>5</sup>Although it's not as conclusive as some have argued <https://www.bi.team/blogs/women-only-apply-for-jobs-when-100-qualified-fact-or-fake-news/>

## Don't talk over women

If men and women talk for equal amounts of time, people report that the women have been talking too much.

Measure it: <http://arenttalkingtoomuch.com/>

Don't talk over women

# Don't pay women less

Anyone here on twitter?

Anyone here enjoy Pay Gap Bot on March 8? <https://twitter.com/PayGapApp>

Intro

oooooooooo

Why

oooooooooooooo

Don't do this

ooooo

Do do this

●ooooooooooo

Conclusions

oooo

# Outline

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# Be an ally

Minorities are told they don't belong, are dealing with stereotype threat, micro-aggressions, and macro-aggressions.

They could do with some support.

# The really easy stuff

- Amplify women's voices
- Pledge: never appear on a panel
- Pledge: never appear at an event without a CoC
- Encourage women and girls : "you can do this"
- Talk about your salary
- Learn about unconscious bias

## Learn about the law

A new thing: Discrimination first aider<sup>6</sup>.

This is first aid for people who are experiencing discrimination - exactly as it says on the tin.

It covers things you might need to know as a first responder in a crisis, supporting a victim of discrimination: practical resources to address the issue, evidence gathering, legal information, and informed emotional support.

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<sup>6</sup><https://valla.uk/discrimination-first-aid-training>

# Consider workload

- There's a workload associated with being in a minority
- **Diversity tax**
- Mentoring, panels, speaking, pastoral care
- Also: actual extra work
- (This is ignoring the shadow workload of harassment tribunals, equal pay appeals, and discrimination cases)

If you're a manager, can you take this into account?

# Volunteer

Pick up some of the diversity work.

- Make sure the events you organise are safe for minorities
- Help organise events for minority groups
- Mentor and sponsor people from minority groups<sup>7</sup>
  - Your mentor can be a peer, or someone junior
  - Sponsors advocate on your behalf
- Don't leave women to do the pastoral stuff

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<sup>7</sup><https://hbr.org/2021/06/dont-just-mentor-women-and-people-of-color-sponsor-them>

## Consider the personal cost of activities

- Events after work or at weekends aren't accessible to all
- Refunding work travel after the fact can be problematic for those with financial constraints
- Travel can be hard for those with caring responsibilities
- Some countries can be dangerous for LGBT+ colleagues, or those from ethnic minorities

## Consider sense-of-belonging

One way to feel like you're not alone as a women in tech is to go to women in tech events

If you have women staff, provide time for them to do this (and travel, if needed)

# Consider homogenisation

- Not every woman wants to get involved in diversity stuff.
- Not every gay person wants to go to Pride
- Not every Asian colleague will be observing Ramadan right now.
- Not every colleague observing Ramadan right now will be Asian.

# Foster self-efficacy

This goes for all people - but particularly minorities

Confidence is really hard to build up and really easy to knock

Compliments are cheap: be excellent to each other. If someone's done a good job, tell them. If someone's not sure they can do something (and you think they can), tell them.

# Foster a sense of belonging

You belong here, I belong here, we all belong here

People should be able to bring their whole selves to work

Think about: catering, holidays, caring responsibilities, accessible spaces.

Intro

oooooooooo

Why

oooooooooooooo

Don't do this

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Do do this

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Conclusions

●ooo

# Outline

1 Intro

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# We all need to take diversity seriously

- It's bad for tech, business, minorities and majorities
- Women can't fix it on our own
  - It's bad for us
  - It's bad for our careers
  - It's bad for tech

# What's good for the gander is good for the goose

"A profession that's better for women is good for all" - Rebecca George

- Better business
- More, happier, diverse workforce
- Better conditions

Also, we've been trying to solve this for ages and we've not succeeded! We need your massive brains to help us crack this one.

# Any questions?

- Questions?
- Thoughts?
- Disagreements?