SOCIAL TIES

Can social media predict the closeness of your friendships?

SLIDESMANIA.COM

HELLO!

WE'RE NOURYA AND HANNAH

SLIDESMANIA.COM

THESE ARE THE TALKING POINTS

01

Intro to Social ties and Social Media

02

Methods of the Paper

03

Results of the Paper

04

Discussion and Applications

SLIDESMANIA.COM

01

Why do we care about social media? What does the literature say so far?

SLIDESMANIA.COM

Guess how many social media users worldwide

SLIDESMANIA.COM

Guess what percentage of Americans are active social media users

SLIDESMANIA.COM

Guess how many hours are spent by the average internet user on social media?

SLIDESMANIA.COM

SOME FACTS ABOUT

SOCIAL MEDIA

4.2

Billion social media users worldwide

74%

of Americans are active social media users

2.5 hrs

Spent by the average internet user on social media per day

SLIDESMANIA.COM

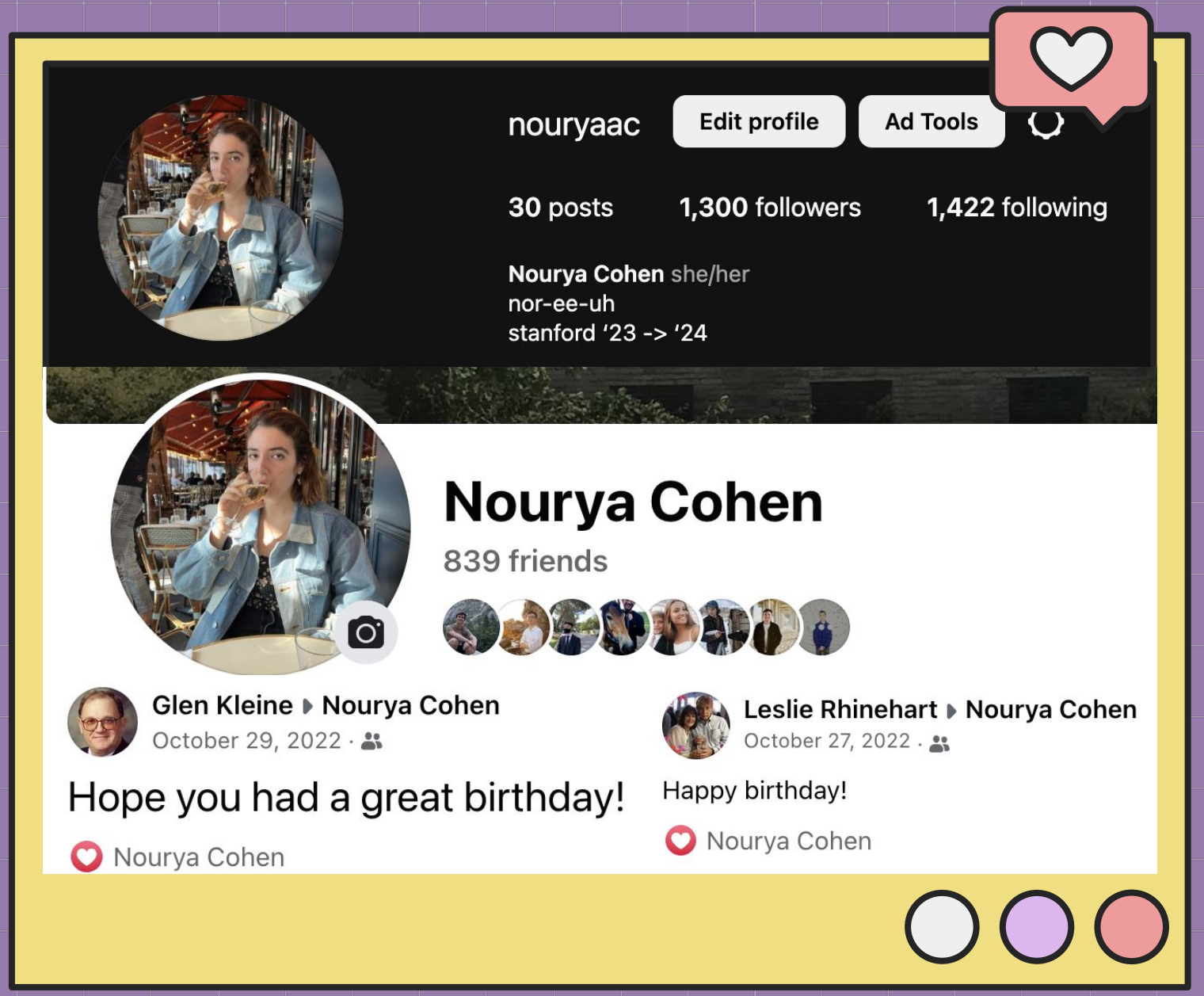
Given how important social media is and how much data is collected...

SLIDESMANIA.COM

What can your social media say about your friendships?

SLIDESMANIA.COM

How many of you guys are friends with someone on Facebook or follow someone on Instagram that you don't actually know and have never met?



SLIDESMANIA.COM

Definitions of ‘Friend’

Tie strength isn’t a binary 1 or 0...

Granovetter claimed that strengths of ties are continuous... what features are most important measures of friendship/strength of ties?

SLIDESMANIA.COM

Let’s say there is a model that can accurately predict the strength of social ties down to the decimal...

SLIDESMANIA.COM

Discuss the following questions:

If successful, what can be done with strength of ties for everyone on Facebook? How about TikTok, Twitter, LinkedIn...?

Who benefits from a model that predicts social ties for each of these platforms? Are they different?

Given collaboration between platforms, could there be even stronger predictors of the nature and strength of ties over time?

SLIDESMANIA.COM

Facebook can predict if your relationship will last

“a couple who can't be identified through dispersion score is significantly more likely to break up -- at least, on Facebook -- within 60 days.” (Backstrom & Kleinberg, 2014)

Dispersion: "the extent to which two people's mutual friends are not themselves well-connected."

SLIDESMANIA.COM

02

Methods

SLIDESMANIA.COM

SOME FACTS ABOUT

THE DATA

26

Median age

32

people studied

62

Friends rated each

SLIDESMANIA.COM

Variables Used:

Predictive Intensity Variables	Distribution	Max
Wall words exchanged		9549
Participant-initiated wall posts		55
Friend-initiated wall posts		47
Inbox messages exchanged		9
Inbox thread depth		31
Participant's status updates		80
Friend's status updates		200
Friend's photo comments		1352
Intimacy Variables		
Participant's number of friends		729
Friend's number of friends		2050
Days since last communication		1115
Wall intimacy words		148
Inbox intimacy words		137
Appearances together in photo		73
Participant's appearances in photo		897
Distance between hometowns (mi)		8182
Friend's relationship status	6% engaged 32% married 30% single 30% in relationship	

Duration Variable		
Days since first communication		1328

Reciprocal Services Variables		
Links exchanged by wall post		688
Applications in common		18

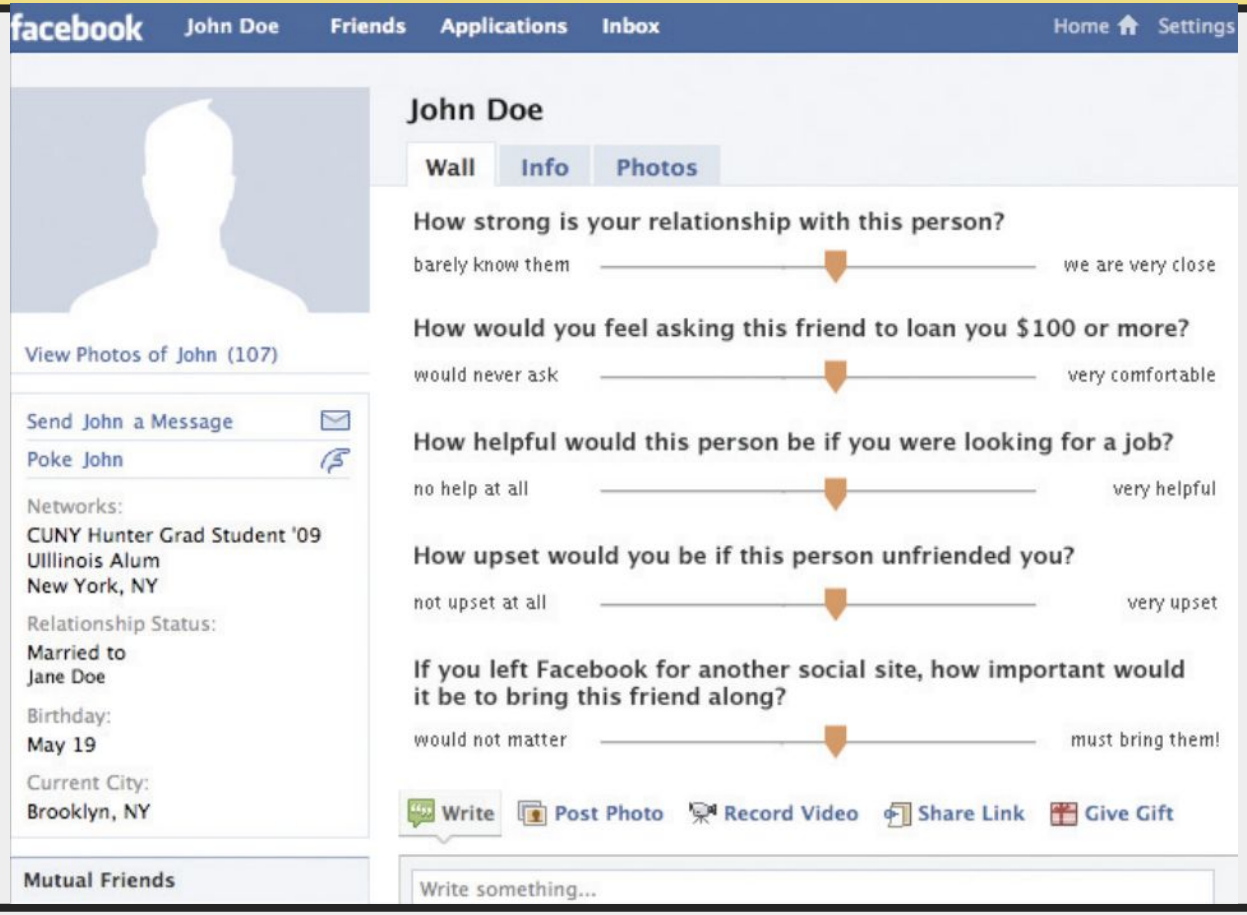
Structural Variables		
Number of mutual friends		206
Groups in common		12
Norm. TF-IDF of *interests* and *about*		73

Emotional Support Variables		
Wall & inbox positive emotion words		197
Wall & inbox negative emotion words		51

Social Distance Variables		
Age difference (days)		5995
Number of occupations difference		8
Educational difference (degrees)		3
Overlapping words in *religion*		2
Political difference (scale)		4

SLIDESMANIA.COM

Variables Predicted:



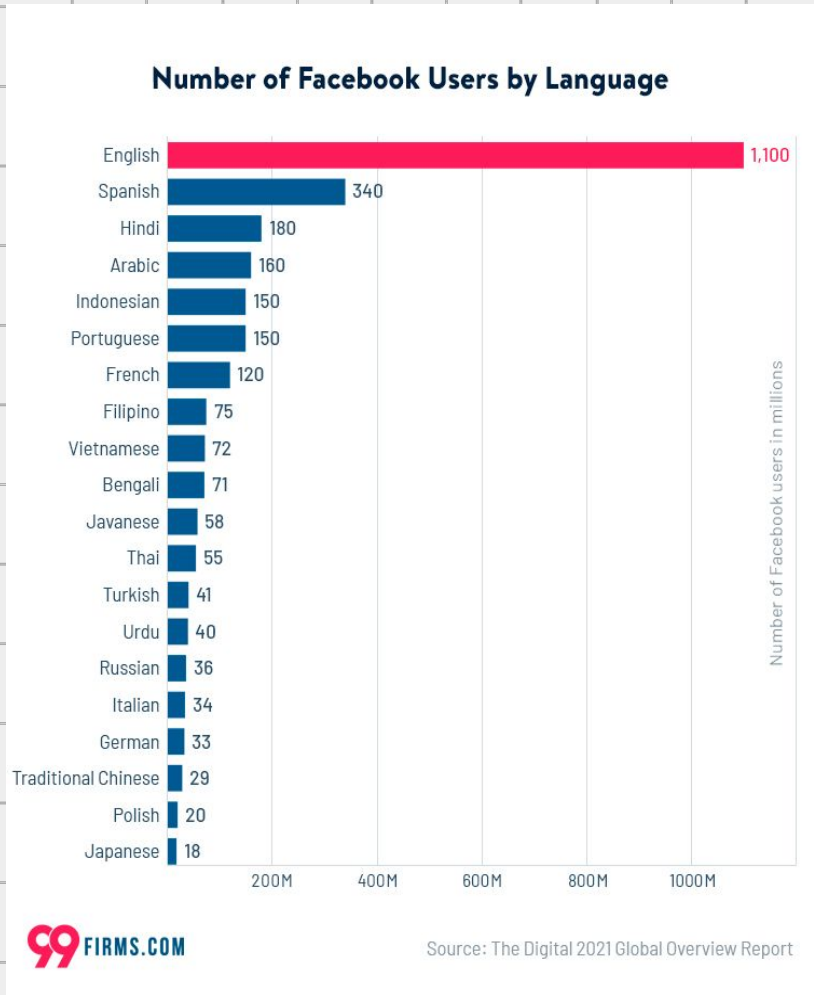
SLIDESMANIA.COM

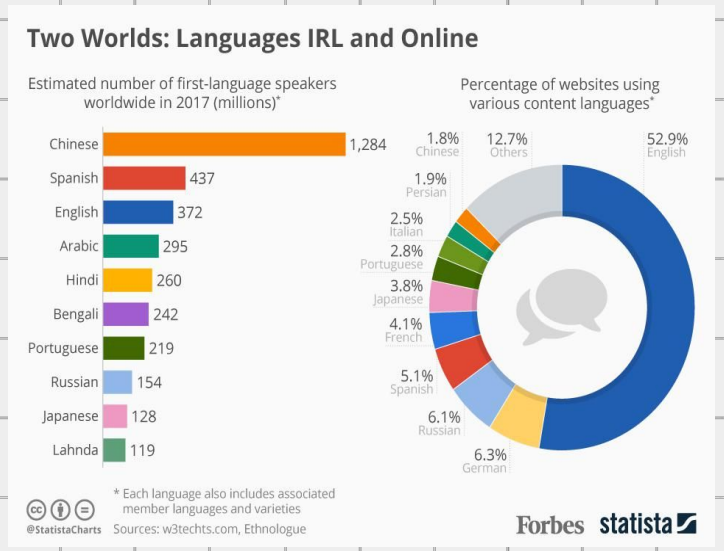
Choosing variables: discuss!

- The participants are all from University of Illinois community...
- Would you test the same variables to predict the strength of social ties? Or propose different variables?
- What other data might Facebook use to predict tie strength?
- To account for fatigue the study cuts the degrees of freedom in half. Is there a better way to account for fatigue?

SLIDESMANIA.COM

Different Languages & Different Communities





Only done on participants in English language – does it still apply to other languages on Facebook? Also take into consideration differences between men and woman, differences in English language (AAVE, code/language switching, etc)

SLIDESMANIA.COM

03

Results

SLIDESMANIA.COM

Accuracy rates: Discussion

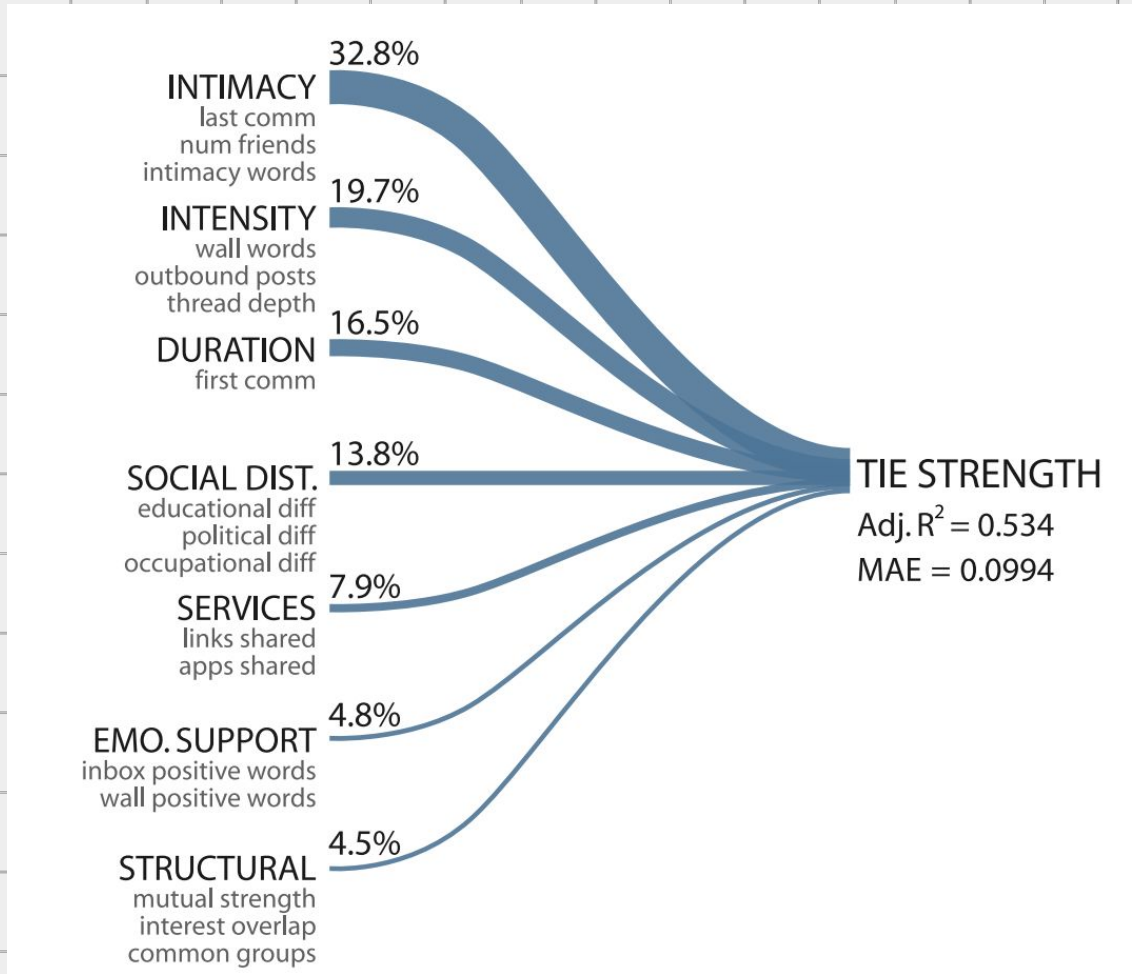
"It performs with surprising accuracy, modeling tie strength to 10-point resolution and correctly classifying friends as strong or weak ties more than **85%** of the time"

The accuracy rate is not 100%, does that change our earlier discussion: is 85% accuracy sufficient for benefitting the platform/users?

WHAT?

SLIDESMANIA.COM

Weight Assignment



SLIDESMANIA.COM

Top 15 Predictive Variables	β	F	p-value
Days since last communication	-0.76	453	**< 0.001**
Days since first communication	0.755	7.55	**< 0.001**
Intimacy × Structural	0.4	12.37	**< 0.001**
Wall words exchanged	0.299	11.51	**< 0.001**
Mean strength of mutual friends	0.257	188.2	**< 0.001**
Educational difference	-0.22	29.72	**< 0.001**
Structural × Structural	0.195	12.41	**< 0.001**
Reciprocal Serv. × Reciprocal Serv.	-0.19	14.4	**< 0.001**
Participant-initiated wall posts	0.146	119.7	**< 0.001**
Inbox thread depth	-0.14	1.09	0.29
Participant's number of friends	-0.14	30.34	**< 0.001**
Inbox positive emotion words	0.135	3.64	**0.05**
Social Distance × Structural	0.13	34	**< 0.001**
Participant's number of apps	-0.12	2.32	0.12
Wall intimacy words	0.111	18.15	**< 0.001**

SLIDESMANIA.COM

04

Discussion & Applications

SLIDESMANIA.COM

“The more messages friends exchange on a single topic, the lower their tie strength.”

– How? Discuss with partner to come up with possible reasons for this phenomenon.

SLIDESMANIA.COM

Use of inboxing data: Discussion

How much do these results matter given that much of the accuracy rate relies on your private inbox messages which ideally are end-to-end encrypted?

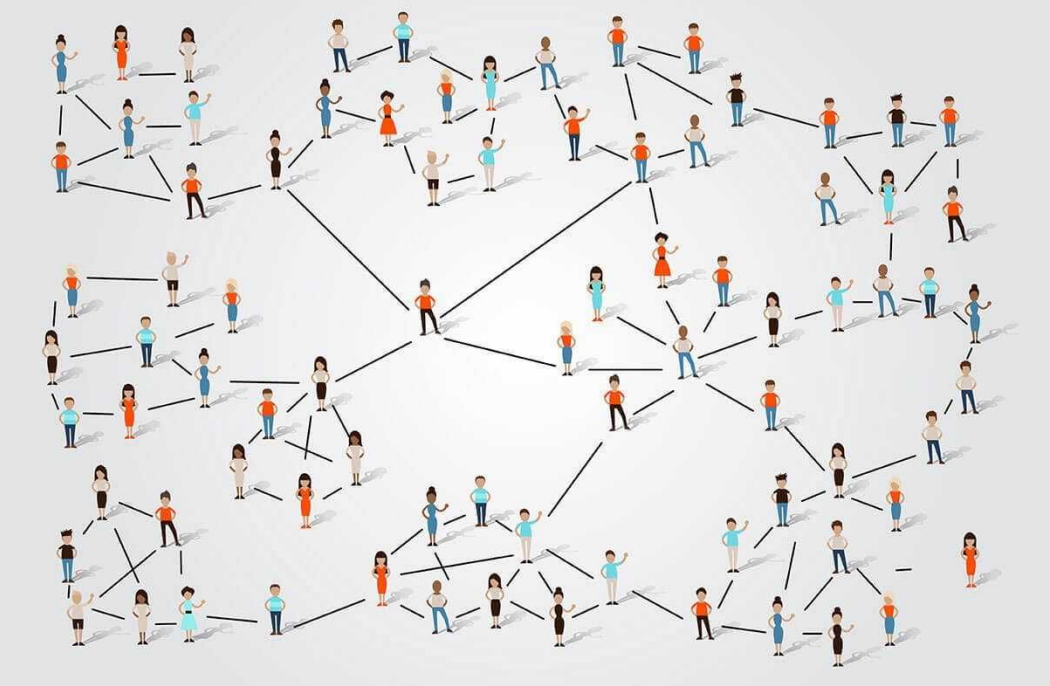
- p-values: Inbox positive emotions word: 0.05, dates of communication: $p < 0.001$ (not encrypted) Intimacy x Structural: $p < 0.001$

-> Facebook didn't add end-to-end encryption until 2016

How do we minimize personal data needed while increasing accuracy to tie prediction to expand networks and opportunities? What variables are unethical to track from the study if applied globally?

SLIDESMANIA.COM

"Poverty is not deprivation. It is isolation"



Six Degrees of Lois Weisberg (Malcolm Gladwell)

Her "social power" from being part of so many different communities

-> "The Strength of Weak Ties"

We are told that Lois knows "the actors, the writers, the doctors, the lawyers, the park lovers, the politicians, the railroad buffs, and the flea-market aficionados" and many more.

SLIDESMANIA.COM

Ethical Concerns

Inherent Polarization from strong ties

“Strong ties are the people you really trust, people whose social circles tightly overlap with your own. Often, they are also the people most like you.”

Applied to large social networks

If Facebook decides to maximize its algorithms for strong ties, it will inherently polarize groups of people. This is because, as Granovetter discovered, people with strong ties tend to be similar to each other. As a result, social networks full of strong ties would result in less diverse communities so Facebook must work towards a balance of weak and strong ties.

SLIDESMANIA.COM