### Who knows what about who?

## Matthew J. Salganik

Social Network (Soc 204) Spring 2017 Princeton University

April 19, 2017

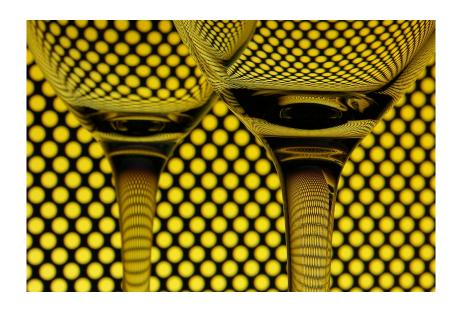


# Logistics:

▶ feedback from my son

#### Vote:

- 1. Goel, S. et al. (2010) Real and perceived attitude agreement in social networks. *Journal of Personality and Social Psychology*.
- 2. Cowan, S. (2014) Secrets and Misperceptions: The Creation of Self-Fulfilling Illusions. *Sociological Science*.



https://commons.wikimedia.org/wiki/File:Uniformity.jpg

your perception of the social world is distorted

- your perception of the social world is distorted
- your perception of your own social world is distorted

- your perception of the social world is distorted
- your perception of your own social world is distorted

## Why do we care?

- interesting
- impacts social influence
- potentially creates social stasis
- important for scale-up method

### Three different approaches

- Goel et al: real and perceived attitude homophily
- ► Cowan: secrets and self-fulfilling illusions
- Salganik et al: game of contacts (not assigned, but similar to homework this week)

Goel et al: Real and perceived attitude homophily

homophily: "love of the same" (offline filter bubble)
People tend to be connected to people who are similar to them:

- sociodemographic homophily
- attitude homophily

Maybe our attitudes are not as similar as we think to our friends?

"Would you go to a One Direction concert if you were given free tickets?"

Alice and Bob are friends

- Alice answers question about Alice
- ► Alice answers question about Bob
- Bob answers question about Bob
- ▶ Bob answers question about Alice

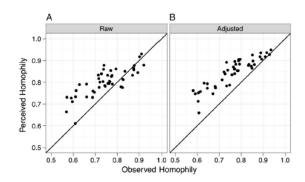
From patterns, we can estimate actual agreement and perceived agreement

## Facebook app used "social graph"; kind of like a social quiz

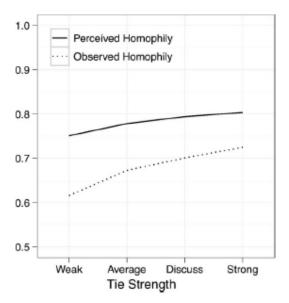


Actual level of attitude agreement in their sample is not very interesting because they have a weird sample (they try lots of statistical fixes that we are not going to discuss, but you should take more statistics classes)

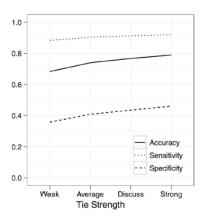
More interesting is the difference between real and perceived agreement



For almost all questions considered, perceived agreement is higher than observed agreement



Perceived agreement is higher than observed agreement for all different tie strengths



- Accuracy = p(correct guess)
- Sensitivity = p(correct guess given agreement)
- Specificity = p(correct guess given disagreement)

People are bad at detecting disagreement



Cowan: secrets and self-fulfilling illusions

Contact hypothesis: when individuals come into contact with a stigmatized outgroup, prejudice decreases

What if secrets prevent us from realized that we are already in connect with stigmatized outgroups?

Survey of random sample of Americans to measuring hearing and telling about two outcomes

- having an abortion
- having a miscarriage

Hypothesis 1: Among concealable characteristics, the less stigmatized the characteristic the more people will hear about it

- ► Estimated that nearly 20% of recognized pregnancies end in abortion
- ► Estimated that 13% of recognized pregnancies end in miscarriage

Hypothesis 1: Among concealable characteristics, the less stigmatized the characteristic the more people will hear about it

- ► Estimated that nearly 20% of recognized pregnancies end in abortion
- ► Estimated that 13% of recognized pregnancies end in miscarriage
- 75% of Americans report knowing someone who has had a miscarriage
- ▶ 50% of Americans report knowing someone who had an abortion

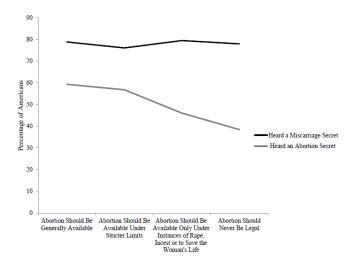
Table 1: Frequency and Magnitude of Secret Telling and Secret Keeping for Own and Others' Miscarriages and Abortions, AMACS 2012

	Respondent or Partner Has Had:			Respondent Has		
				Heard of Someone Else's:		
	Miscarriage	Abortion	Diff.	Miscarriage	Abortion	Diff.
Secret telling	_			-		
Respondent disclosed secret (%)	77.31	66.00	+	31.14	15.85	+
If disclosed, mean number of						
people told	2.63	1.24	ŧ	2.73	2.22	+
Total people told per event	2.03	0.82	ŧ	0.85	0.35	t
Secret keeping <sup>a</sup>						
Respondent kept secret (%)	7.36	31.01	ŧ	12.71	24.68	ŧ
If kept, mean number of people						
kept from	2.61	2.63		3.66	3.01	*
Total people secret kept from						
per event	0.20	0.82	ŧ	0.47	0.74	ŧ
N	278	179		1275	856	

Difference in hearing is caused by difference in telling and concealing

Hypothesis 2: Among concealable characteristics, people who hold positive attitudes toward the characteristics are more likely to hear about it

Hypothesis 2: Among concealable characteristics, people who hold positive attitudes toward the characteristics are more likely to hear about it



Hypothesis 3: Among concealable characteristics, the more stigmatized the more likely to be disclosed to those who are accepting

Hypothesis 3: Among concealable characteristics, the more stigmatized the more likely to be disclosed to those who are accepting

### Supported by:

- open-ended responses to survey
- intake data from abortion clinic

Information ends up where it will have the least effect

# Salganik et al: game of contacts

What percentage of the alters connected to a heavy drug user knew the person they were connected to was a heavy drug user?

The game of contacts: Estimating the social visibility of groups<sup>☆</sup>

Matthew J. Salganik <sup>a,\*</sup>, Maeve B. Mello <sup>b</sup>, Alexandre H. Abdo <sup>c</sup>, Neilane Bertoni <sup>b</sup>, Dimitri Fazito <sup>d</sup>, Francisco I. Bastos <sup>b,e</sup>

paper: http://www.princeton.edu/~mjs3/game\_of\_contacts.pdf
data and code: http://opr.princeton.edu/archive/gc/

<sup>&</sup>lt;sup>a</sup> Department of Sociology and Office of Population Research, Princeton University, Princeton, NJ, USA

<sup>&</sup>lt;sup>b</sup> Laboratory on Health Information, Oswaldo Cruz Foundation, Rio de Janeiro, Brazil

c Department of Physics, University of São Paulo, São Paulo, Brazil

d Department of Demography, Center of Development and Regional Planning, Federal University of Minas Gerais, Belo Horizonte, Brazil

<sup>&</sup>lt;sup>e</sup> Fulbright/Capes Visiting Scholar, Brown University, Providence, RI, USA

## Interviewer shuffles a deck of 24 playing cards



A card is pulled from the deck and the respondent is asked:



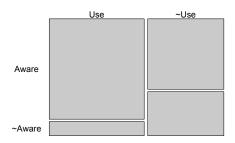
How many people do you know named [Amadeu]?

The respondent will pick up this many blocks and place them:



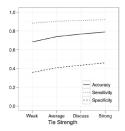
Record answers; clear board; repeated for 24 names.

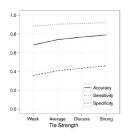
## 294 participants told us about 4,173 alters

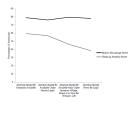


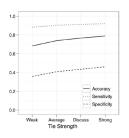
#### Evidence of:

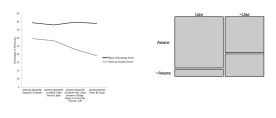
- selective exposure
- selective disclosure

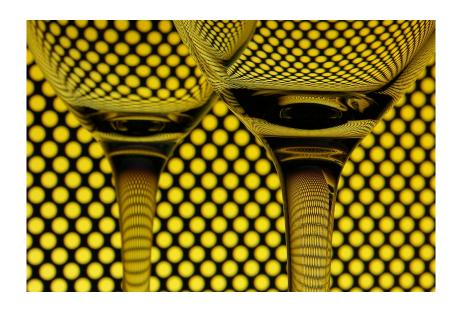












https://commons.wikimedia.org/wiki/File:Uniformity.jpg

## Summary:

- your beliefs about the attitude of your friends are probably systematically distorted
- systematic biases in information awareness may promote stability of attitudes
- systematic biases can mess up scale-up estimates

# http://bit.ly/socnet204

### Next class:

► Experimental studies of contagion

People in the same household tend to both vote or both not vote

- selection (people choose to live with people who are similar)
- shared environment
- social influence

All the articles take an experimental approach where the researchers intervene and study the effects