

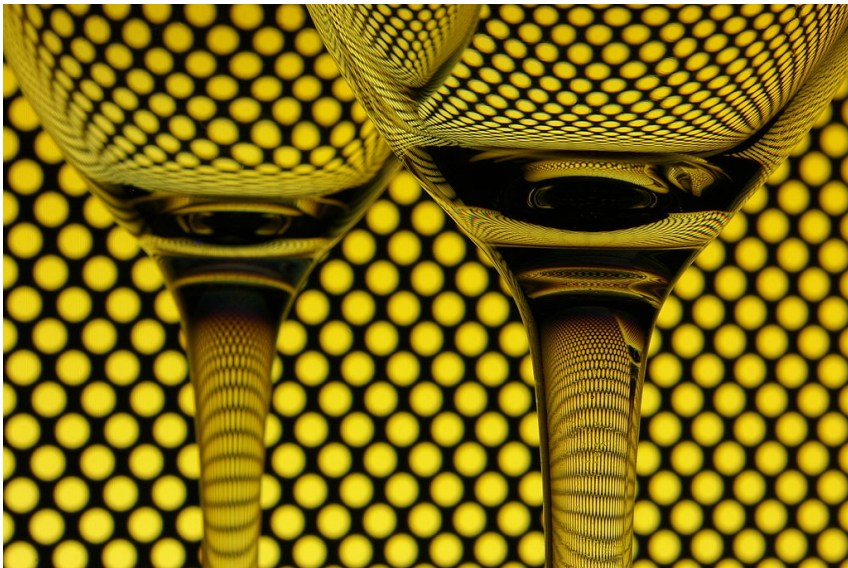
# Lecture 23: Who knows what about who?

Matthew J. Salganik

Sociology 204: Social Networks  
Princeton University

1/2 Game of contacts and the scale-up method





- ▶ your perception of the social world is distorted

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Why do we care?

- ▶ important for scale-up method

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

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- ▶ Hidden population: Heavy drug users, people who had used illegal drugs other than marijuana more than 25 times in the past 6 months
- ▶ Location: Curitiba, Brazil (1.8 million people)
- ▶ Funded by UNAIDS and Brazilian Ministry of Health



Map source: Wikipedia

We want to learn about:

- ▶ true positive rate (probability that a randomly chosen alter of a randomly chosen ego in the hidden population is aware that ego is in the hidden population)



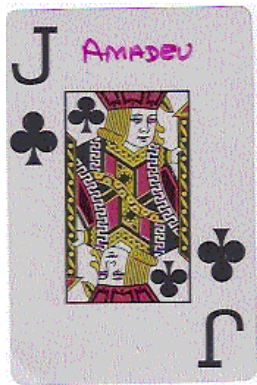
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Interviewer shuffles a deck of 24 playing cards



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:

<p>SABE que você usa drogas</p> <p>ele/ela <b>USA</b> drogas</p>	<p>SABE que você usa drogas</p> <p>ele/ela <b>NÃO USA</b> drogas</p>
<p><b>NÃO SABE</b> que você usa drogas</p> <p>ele/ela <b>USA</b> drogas</p>	<p><b>NÃO SABE</b> que você usa drogas</p> <p>ele/ela <b>NÃO USA</b> drogas</p>

Record answers; clear board; repeated for 24 names.

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Alter aware that ego uses drugs	2082	1156
Alter not aware that ego uses drugs	225	710

► Overall

$$\hat{\tau} = \frac{\text{total alters aware}}{\text{total alters}} = \frac{3,238}{4,173} = 0.78$$

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$$\hat{\tau} = \frac{\text{total alters aware}}{\text{total alters}} = \frac{1,156}{1,866} = 0.62$$

	Use	~Use
Aware		
~Aware		

Evidence of:

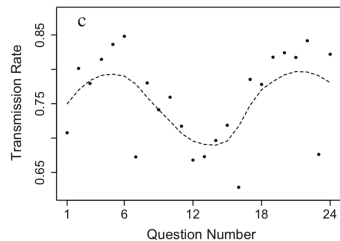
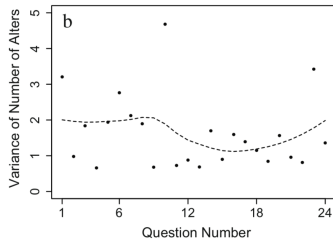
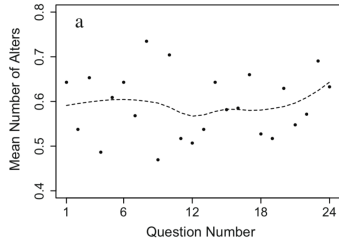
- ▶ selective exposure



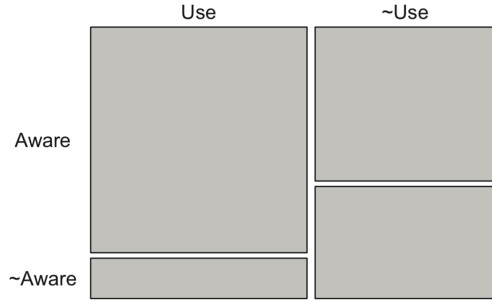
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Evidence of:

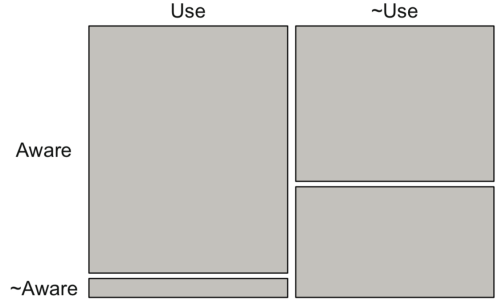
- ▶ selective exposure
- ▶ selective disclosure



► No strong evidence of question order effects



(a) Interviewer A



(b) Interviewer B

► No strong interviewer effects

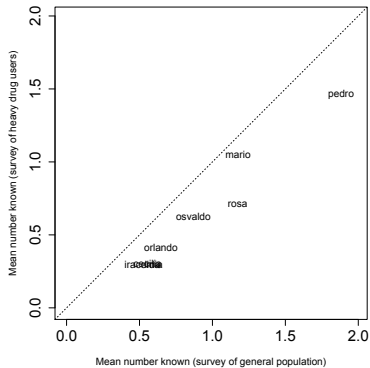
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Bonus: we can combine this data with data from the general population to learn about the degree ratio (the difference in average network size between the hidden population and general population)



Degree ratio is 0.69. People in the hidden population have smaller personal networks than people in the general population

$$\hat{v}_{H,F} = \hat{d}_{F,F} \times \underbrace{\frac{\widehat{\bar{d}_{H,F}}}{\bar{d}_{F,F}}}_{\text{degree ratio } (\delta)} \times \underbrace{\frac{\widehat{\bar{v}_{H,F}}}{\bar{d}_{H,F}}}_{\text{true positive rate } (\tau)}$$

$$\hat{v}_{H,F} = 184 \times 0.69 \times 0.77 \approx 100$$

Average visible degree of the hidden population is very different from the average degree of the population

How else can we study who knows what about who and what impacts that might have on individuals and groups?