Class 16: Experimental studies of contagion

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Sociology 204: Social Networks
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2/3 Is voting contagious?

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Is Voting Contagious? Evidence from Two Field Experiments

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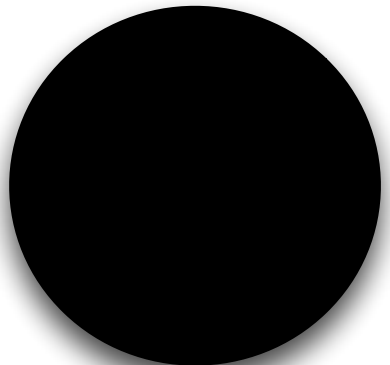

$$P_1 \Leftrightarrow P_2$$

$$\begin{array}{c} \textit{Treatment} \\ \downarrow^{T} \\ P_1 \overset{S}{\rightarrow} P_2 \end{array}$$

Contagion effect: $\alpha = \frac{S}{T}$

Note that there is nothing specific in this design to voting. This could be any intervention.

TABLE 1. Possible Outcomes under placebo protocol

		Probability of Event Occurring	Voting Rate of Answerer	Voting Rate of Person Who Did Not Answer Door
GOTV	Door Answered	π	$\mu_1 + T$	$\mu_2 + S$
	No Answer	$1 - \pi$	N.A.[a]	μ_3
Recycling	Door Answered	π	μ_1	μ_2
	No Answer	$1 - \pi$	N.A.	μ_3

[a] N.A. = Not applicable.

The role of the recycling intervention is to create a "fair" comparison.

TABLE 3. Treatment Effect among Contacted Households

	Denver		Minneapolis		Pooled	
	Direct	Secondary	Direct	Secondary	Direct	Secondary
Percent Voting in GOTV Group	47.7% (3.0)	42.4% (2.9)	27.1% (3.1)	23.6% (3.0)		
Percent Voting in Recycling Group	39.1% (2.9)	36.9% (2.9)	16.2% (2.7)	17.3% (2.7)		
Estimated Treatment Effect	**8.6% (4.2)**	**5.5% (4.1)**	**10.9% (4.1)**	**6.4% (4.1)**	**9.8% (2.9)**	**6.0% (2.9)**
P-Value	0.02	0.09	<0.01	0.06	<0.01	0.02

Note. Numbers in parentheses represent standard errors. P-values test the one-tailed hypothesis. Pooled estimates are weighted averages of results for both cities.

How much should you trust these results? Internal and external validity

TABLE 2. Balance of Observable Traits by Treatment Assignment

		Denver			Minneapolis		
Stage	Category	GOTV	Recycling	Control	GOTV	Recycling	Control
Assignment	Age	56.1	55.5	56.1	46.6	47.9	45.9
	Votes cast in past five elections	2.9	2.8	2.9	2.6	2.6	2.6
Application	House Contacted	33.2%	32.8%		46.2%	43.5%	
	Go Away	2.5%	4.1%		1.8%	1.1%	
	Moved	0.9%	0.6%		1.4%	0.7%	
	Can't Attempt	5.4%	4.2%		6.6%	6.4%	
	No Answer	58.0%	58.3%		44.0%	48.3%	
	Number Contacted	283	279		203	191	
Contacted	Age	55.9	56.0		47.7	48.5	
	Votes cast in past five elections	2.9	2.9		2.7	2.7	

Note. Age and vote history were taken from county voter files. Canvassers were asked to record the disposition of each door knock.

Internal validity: it looks like the get-out-the-vote people and the recycling people are similar

External validity (partial list)

- ties within households are different from other ties

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- these results are from a low salience election (might be different in a presidential election)
- other behaviors might not be as contagious as voter turnout

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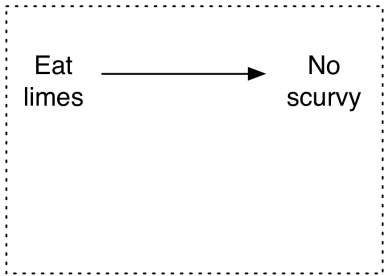
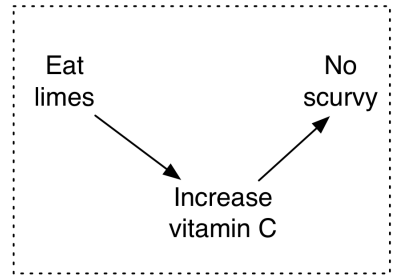
- Need to count the spillover (if you generate 100 direct votes, you also generate about 60 indirect votes)
- No idea about mechanism so hard to design more contagious treatments



Causal effect without mechanism



Causal effect with mechanism

- contagion of voting via "intervene and spillover" design

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- contagion of emotion via an "edge-control" design