What is a Randomised Controlled Trial?

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IPEG and Politics

Consider this problem

- A team of researchers wanted to find out whether door-to-door canvassing increases voter turnout
- They surveyed a random sample of electors and asked whether they were canvassed
- They then correlated whether they were canvassed with whether they voted
- They claimed that canvassing increases voter turnout
- Are they right?

Can you get round the problem?

- The regression approach: you could rule out all known determinants of turnout (gender, education, age etc) so that you could be reasonably sure that it is only canvassing that that has the effect
- Two stage approach: you treat canvassing as endogenous to the model, you create a first stage regression with an instrument to create an unbiased estimate at the second stage

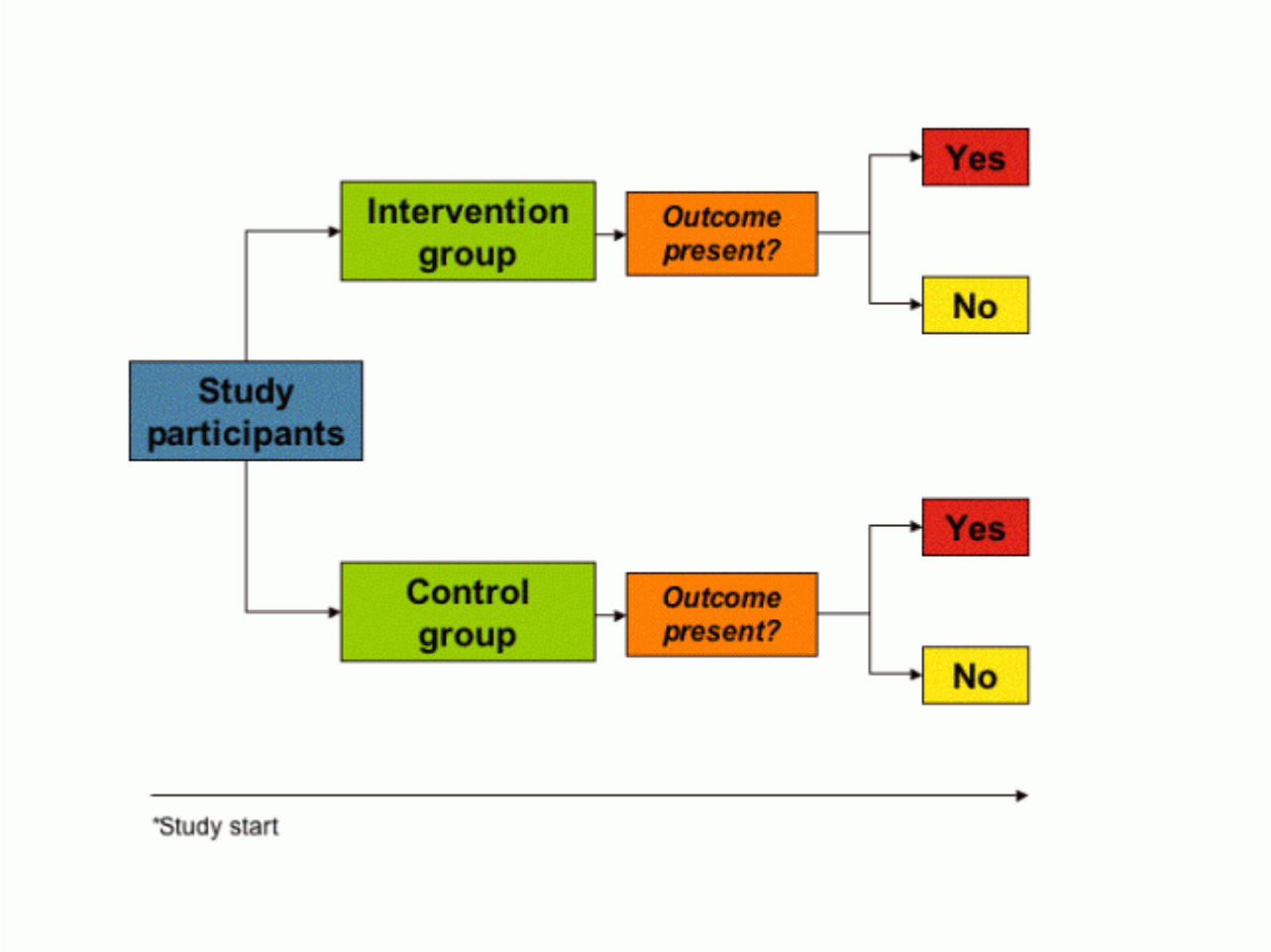
Experiments

- These are where the researcher manipulates a variable of interest to see if it causes the outcome
- Natural experiments - where by chance this happens - are very rare
- Hard to have complete control over the environment as in scientific experiments
- The key aspect – in social science - is to have control subjects who are not manipulated
- You can have qualitative experiments, design experiments – suffer from weak internal and external validity
- Regression discontinuity design
- Quasi experiments (Cook)

A Randomised Controlled Trial

- A RCT is special kind of experiment where two or more groups of subjects are compared with a control group who does not get the treatment
- Randomisation between treated and control subjects ensures that there are no other differences than the treatment ➔ unbiased estimate of the treatment
- Power analysis before the experiment allows the researcher to design experiment which is capable of rejecting a hypothesis. So RCTs need to be of sufficient numbers
- Measurement after the intervention crucial (measurement before the intervention is useful too)

Design of a RCT



Some features of well-run RCTs

- **Single Blind Trial** In a single blind trial, the researcher knows the details of the treatment but the subject does not.
- **Double Blind Trial** both the researcher and the subject does not know the details of the treatment
- **Triple Blind Trial** the researcher, the subject and the statistician do not know the details of the treatment

Other features of RCTs

- Can be lab or field
- Can be individuals, groups or communities
- RCTs can have multiple treatments and stages
- Either the researcher randomises or another agency does
- Ethical approval is complicated
- Procedures for carrying them out: CONSORT
- Analysis issues are complex, but randomisation provides a perfect instrumental variable
- Recent developments to deal with selection by instrumental variables, CACE models
- Different kinds of randomisation – blocked, paired

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More on RCTs

- Placebo can substitute for control group
- Can you correct for differential attrition
- In spite of high internal validity RCTs find it hard to get a causal mechanisms so need for complex designs and mediation analysis
- External validity an issue: to what extent can you generalise from the local context of a RCT

Can correct conventional wisdom

Scared Straight - Petrosino et al 2002: shows that attempts to shock young offenders by exposure to prisoners increasing offending (meta analysis of nine trials, 946 16-17 year olds, mainly male) – greater odds re-offending of 1.68

Why is this happening? Hard to say from the RCTs - could be information, or anticipatory socialisation?

Where RCTs cluster

Health – social science side of health trials

Education – learning programmes, e.g.mentoring

Employment, welfare, - government interventions

Crime

Less in political science, until recently

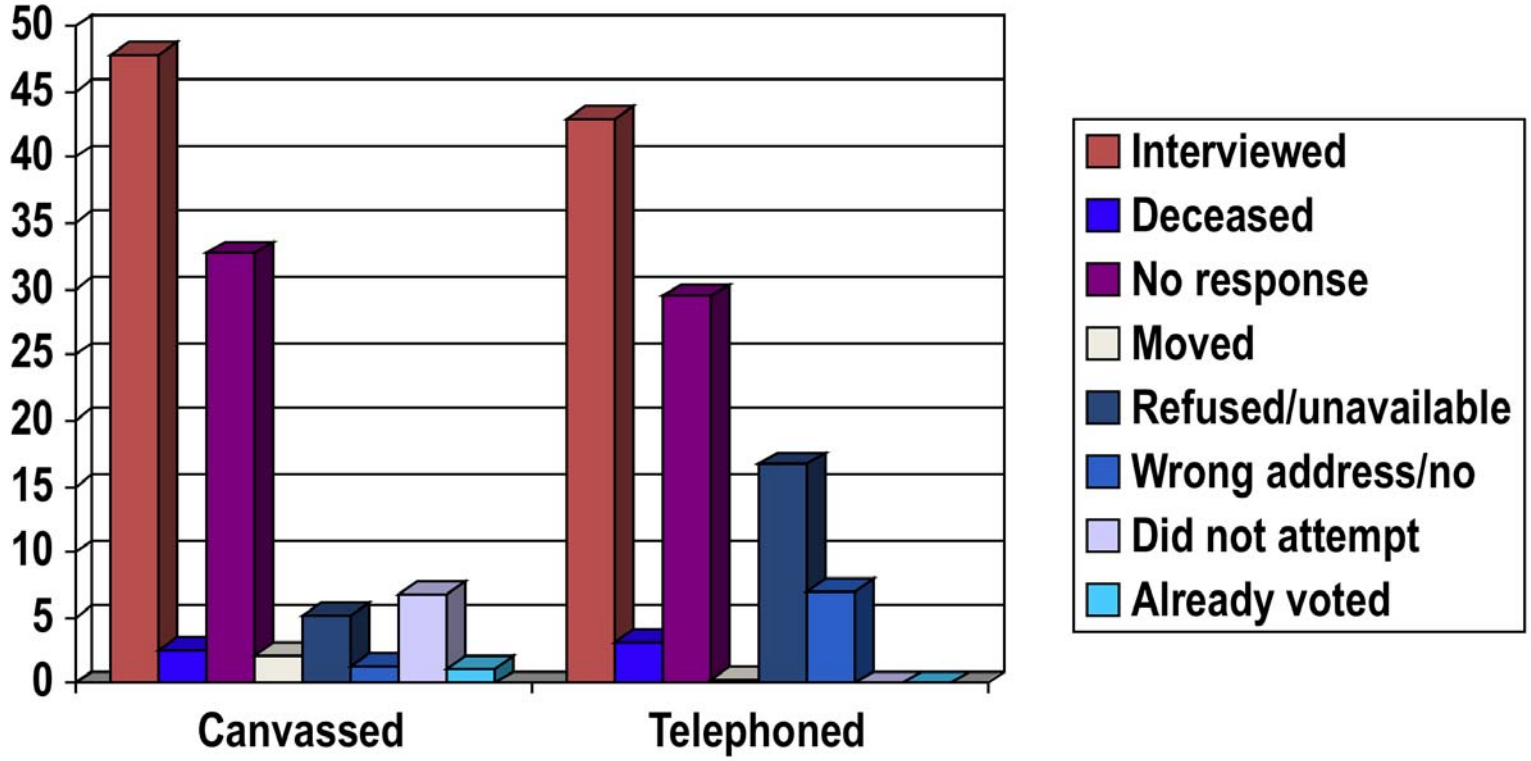
Example from voter turnout

- Chose a safe constituency for 2005: Wythenshawe and Sale East, had 49 per cent turnout in 2001
- Randomly selected 6,900 from 9,976 voters on electoral register who had accessible telephone numbers
- Randomised into three groups of 2,300, one control, two treatment
- Handed 2,300 to Vision 21, a local survey company, who telephoned them with a prepared script for two weeks prior to election
- Canvassed the other 2,300 by groups of students and Vision 21 fieldworkers following the same script

Study design continued

- Treatment groups got a letter informing them about the study
- Script stressed duty to vote, decline in turnout, what would happen if no one turned out, importance of influencing outcome
- Questions about intentions to vote and postal voting
- Also provided information about voting procedures

Who got the treatment?



Results

	Canvassing	*Telephone*
Treatment	1237	1281
Control	1273	1273
Contacted	664	611
Voted Treatment	681=55.1%	704=55.0%
Voted Control	655=51.5%	655=51.5%

Results

	Canvassing	Telephone
Contact Rate	**.53**	**.48**
Intent-to-treat Effect	**3.6**	**3.5**
Treatment Effect	**6.7**	**7.3**
Significance	**.035***	**.038***
Statistical Power	**56.5**	**55.2**

***=significant p. < .05**

RCTs: not the new nirvana!

- Randomisation can go wrong
- Things happen in the field that can invalidate the experiment - e.g. other agencies start a new intervention
- The control and treatment group make contact
- The control group seeks to emulate the treatment group
- Not everyone takes the treatment, so how do you estimate the treatment effect?
- Hard to convince ethics committees
- Hard to convince practitioners to randomise

The project

- Part of the *Rediscovering the Civic* programme of research
- Funded by ESRC/CLG/NWIN
- Joint project of University of Manchester (Institute for Political and Economic Governance) and University of Southampton (Centre for Citizenship and Democracy
- Co-work with Alice Moseley, Sarah Cotterill, Hanhua Liu, Hisako Nomura, Liz Richardson, Pat Sturgis, Graham Smith, Gerry Stoker and Corinne Wales
- Variety of experiments (RCTs, design experiments) and other work on aspects of civil engagement (voting, recycling, lobbying, pledging etc)

http://www.civicbehaviour.org.uk/research/

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Our trials

- Recycling experiment to see if canvassing worked (Cotterill)
- Online deliberation experiment online
- Information and e-petitions (Margetts)
- recycling experiment to see if feedback (Smileys) increases participation (Nomura)
- Does pledging increases donations for books as opposed to just an ask (Cotterill)?
- Does the message affect the response to lobbying councillors (Richardson/John)?
- Does opting out versus opting in affect organ donation (Stoker and Moseley)?

Links and further information

- Designing Randomised Trials in Health, Education and the Social Sciences, 2008 book Torgerson and Torgerson
- http://www.consort-statement.org/
- http://www.york.ac.uk/healthsciences/research/trials.htm
- http://isps.research.yale.edu/