

Randomization & Pseudo-Randomization

Lecture 4 Part II

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Exp Class Lectures

Dealing with Other Types of Noncompliance

In the Laboratory: Using Financial Incentives & Other Motivation Techniques & Sequential Experiments

- Auction experiments are particularly interesting cases of noncompliance

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- First, some are sequential experiments in order to evaluate whether experience in previous auctions leads to less overbidding in a subsequent experiment.
- Have found that indeed experienced subjects, when they return for a second auction experiment, are less susceptible to the winner's curse.
- But subjects that show up for the second experiment could be ones that did well in the first & that the ones who did not do well did not choose to show up.

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- Does learning occur during the experiment; are subjects less susceptible to the winner's curse in later rounds than in earlier rounds?
- Evidence subjects overbid less in later rounds, but may be simply a selection effect.

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- When subjects had a greater incentive found those who made poorer choices in first session were more likely to show-up, demonstrating that selection effects do occur in sequential auction experiments & that estimates of effect of experience overstated.
- Furthermore, when subjects had higher initial balances & were less likely to go bankrupt during a session, subjects at the end of a session made poorer choices than when bankruptcy was more likely, demonstrating that selection effects also occur & that estimates of learning during a session were previously overstated as well.

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- They argue that the sample sizes in experiments such as theirs, although relatively large compared to many other laboratory experiments, are not large enough for the econometric techniques.
- Their results suggest that if a researcher is worried about noncompliance in a laboratory experiment, design solutions such as Casari, Ham, and Kagel's are much more likely to yield useful answers than econometric or statistical techniques after the experiment.

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- Consider an example in which there are just 2 levels at which individuals interact & cross-effects might occur, household & neighborhood.

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- Points out can avoid household level randomization issue by selecting only one subject per household, & reduce some complications of design.

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Definition (Multi-level Experiment)

An experiment in which subjects are randomly assigned to manipulations using a layered approach in which subjects are viewed as interacting in definable separate groups in a hierarchy of groups such that lower level groups are nested. Randomization occurs within groups by layer.

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- Suppose that conflict-avoiders, in event subjected to negative advertising, react strongly; probability of voting falls by 10 % points.
- Negative ads slightly demobilize conflict-neutral types; intention to vote falls by 5 points.
- Conflict lovers become slightly more likely to vote (rises by 5 points).

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- Contend allowing subjects to “noncomply” or self select into treatment gives a better measure of causal effects of treatment as applied to many political science research questions.
- Suggest conduct experiments in which subjects are both forced (to extent possible) to comply & ones in which subjects can choose whether or not to comply to treatment as a way of measuring effects of treatments in situations where self selection is prevalent in observational world.

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- If subjects are not told in advance, technically subjects are always able to cease their participation in an experiment at any time.
- Yet, because subjects have already agreed to participate & are physically at the laboratory, less likely to choose not to watch the ads than they might outside the lab.

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- Agree Gaines & Kuklinski have useful point that in some cases interested in causal effect of treatment only on those who would self select into treatment if no intervention by an experimentalist had occurred.
- Believe that to understand why it is that someone might choose not to select the treatment observationally it is useful to understand more fully effect of treatment if they were forced to receive treatment.

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- For instance, if discover voters who are conflict-averse are demobilized by neg ads but voters who are conflict-loving are mobilized, by studying effects of campaign advertising on both types of voters we better understand how campaign advertising works to mobilize those voters who select to watch ads, conflict-loving voters.

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- In absence of an experiment that considers effects of neg ads on conflict-averse voters, do not have good evidence about relationship between conflict preferences, mobilization, & neg ads.

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- In field expts, however, it may not be possible to observe all choices made by the units of observation in the population of interest.
- For example, some subjects given treatment may fail to respond to post-treatment surveys or other measurement instruments as GKB discovered when only 55.8 percent of their subjects participated in their post-treatment survey.

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- Is Missing Data a Problem?
- Frangakis & Rubin (1999) show that under some general assumptions missing data can be a problem for estimating causal effects when there is also a compliance or selection bias in the data.
- In field experiments, where noncompliance is likely to occur, then missing data can be a problem as well.

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- Evidence suggests prepaid monetary incentives tends to have positive effects on survey responses – increasing response rates for face-to-face interviews, mail, & telephone surveys [see references in book].
- There is also evidence that these prepaid incentives increase quality of data generated [see references in book].

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- In this fashion a researcher both exploits manipulation to avoid confounding and panel data for control of observables that are suspected or known to confound.
- The advantages of using time coupled with manipulation to establish causal effects are well known. Heckman and Robb (1985, 1986, and 1988) present an excellent review of this literature and the approaches involved with observational data.

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- Gentzkow method is called a Difference-in-Differences approach.
- As our focus is more explicitly on experiments and less on estimation of causal effects over long periods of time, we do not review the literature on these methods in its entirety here.
- Furthermore, many of the issues involved are similar to those discussed previously where observations may be separated by time if we assume that the asymptotic properties of cross-sectional methods are applicable (that is the number of observations per period is much larger than the number of periods).

- Table 5.1 provides a summary of methods discussed in Lecture 4, what problems each helps alleviate, and the assumptions underlying each method.