



# Understanding Experimental Methods *... for Policy Research*

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- Why use experiments?
  - Statistical rationale
  - “Sociological” rationale

- What does “experiment” mean?

- Essence of experimentation:  
*intervene and compare.*

*To find out what happens to a system when you interfere with it you have to interfere with it (not just passively observe it).*

(Box, 1966)

- Distinguishes from observational research
- Experiments intervene by assigning people to different treatment conditions

- Why intervene?
  - From a statistical perspective, the reason is to address *confounding*

*confound: v. to fail to discern differences between: mix up*  
(Merriam-Webster)

- **Vignette:**
  - Forest rangers study in Aceh (Paler, Samii, & Lisiecki, 2016)
  - Mitigate illegal logging
  - Offer alternative occupation to those recruited into illegal logging
  - Effects of such alternatives on engaging in logging, forest conservation

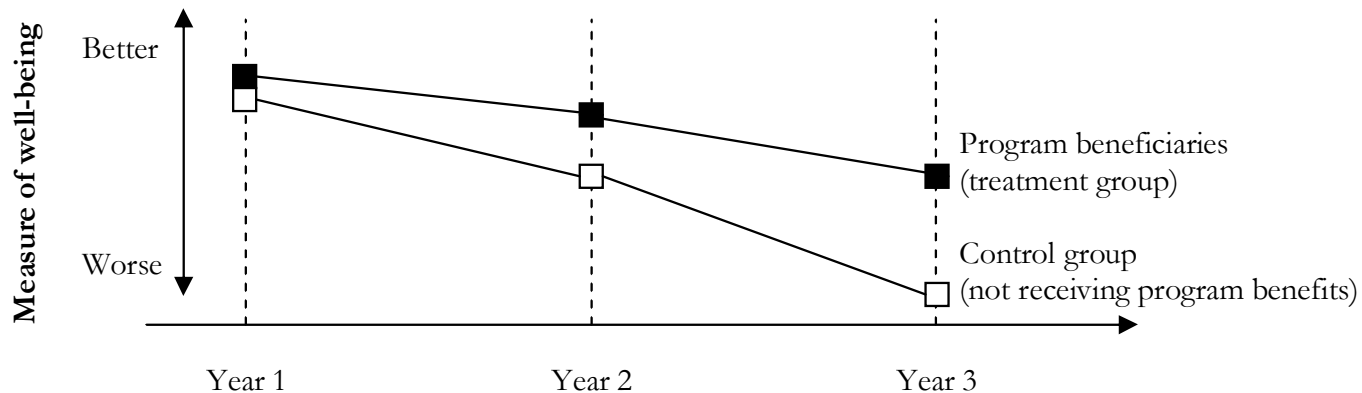


*Monitoring illegal logging with the Sungai Mas Rangers.*

- Why intervene?
  - From a statistical perspective, the reason is to address *confounding*
  - Suppose we used observational methods
  - Two types of confounds:
    - “Selection”: people receiving treatment differ from those who do not in hard-to-measure ways
    - “Bundling”: people receiving treatment are also receiving other things that are not measured

- Why intervene?
  - Experiments help to remove the confounds:
    - “Selection”: assign treatments in a way that *ensures comparability* (e.g., randomization)

Figure 1: Illustrating the Before-After Fallacy



- “Bundling”: isolate effects of things you *actually manipulate* via intervention

- Why intervene?
  - But there are reasons beyond statistics
  - “Sociological” reasons:
    - Putting manipulability to the test
    - Deep engagement



- Why intervene?
  - Putting manipulability to the test:

*casual factor* → *outcome of interest*

- Why intervene?
  - Putting manipulability to the test:

*casual factor* → *outcome of interest*

Observational research sheds light on mechanisms

But leaves the question: Can the mechanism be *affected*? Can we really *do* anything?

- Why intervene?
  - Deep engagement:
    - Experimental studies are *prospective*
    - Research operates alongside implementation
    - Program goals have to be made concrete

*We are all Albert Hirschman now.*  
(Blattman, 2016)

- Challenges to using experiments
  - *Time scale*: can only sustain treatment variation for so long
  - *Spatial scale*: hard to experiment with macro factors
  - *Logistics*: much more up-front investment

- Conclusion
  - Experiments have value in terms of statistics but also other reasons
  - They are especially valuable when motivated by a *debate*