Lifecycle of an experiment | *yy*

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Key points for this lecture | *Points clés du cours*

- Find a design that is scientifically sound, cost-effective, ethical, and that is (maximimally) informative for decisionmakers
- Build credibility in your design by registering a detailed plan first
- Things will happen that are not expected!
- Report on what happened honestly, enable future researchers to confirm what you found and build on it

yy

14 Steps | *Points clés du cours*

1. Where to start
2. Finding an implementer
3. Working with partners
4. Define your design
5. Assess your design
6. Funding
7. Scoping and piloting
8. Feedback
9. Preanalysis plans
10. Pivoting
11. Populated analysis plans
12. Analysis and reconciliation
13. Communicating
14. Archiving

yy

Where to start | *yy*

Who finds the idea:

- You
- Partner organization
- Funding sources

Where the idea comes from:

- Reading literature (create gap map, replication)
- Interviews/participant observation with beneficiaries or partners
- Identify evidence gaps in practice

yy

Finding an implementer | *yy*

A good implementing partner:

- Shares your learning goals
- Can work at the scale needed for power
- Has buy-in from relevant internal and external decisionmakers
- Ideally, has funds for implementation (and even measurement) or can help raise them

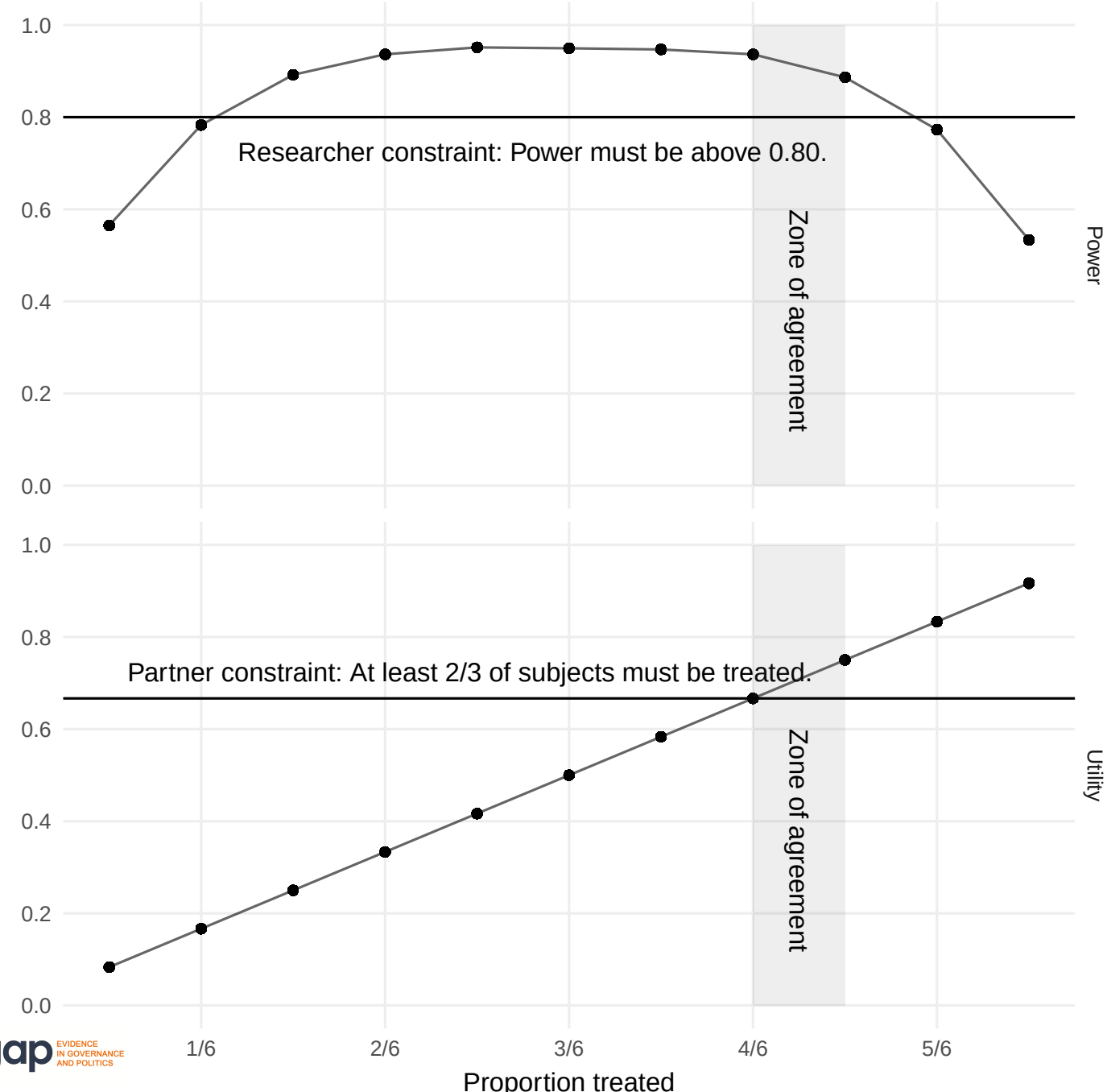
yy

Working with partners | *yy*

- What to do when partner goals conflict with scientific goals?
- Publication rights
- Contribute to partner's decisionmaking

yy

Working with partners | *Points clés du cours*



Declare (define) your design | *yy*

- Causal model (how you think it works)
- Specific research question
- Randomization and measurement procedures
- Analysis procedure

yy

Assess your design | *yy*

- It it powered?
- Is your analysis procedure biased? (Analyze as your randomize!)
- Can you quantify uncertainty?
- Is it cost effective?
- Do benefits outweigh costs to participants?
- What are risks to participants, communities, research staff?

yy

Funding | *yy*

- Pilot funding
- Implementation funding
- Research funding
  - National research agencies
  - National development agencies
  - JPAL, IPA
  - Philanthropies
  - Implementer

yy

Scoping and piloting | *yy*

- Is the intervention feasible?
- Is your measurement strategy feasible?
- What information/data do you need to carry out your experiment?
- Cannot learn much about the effect size!
- Large pilots not worth it – except as proof of concept

yy

Feedback | *yy*

- Who: researchers, implementers, policymakers, and participants/beneficiaries
- What: will the research provide (maximally) useful evidence? Is the study worth running?
- When: before scoping, before preanalysis plan, before analysis

yy

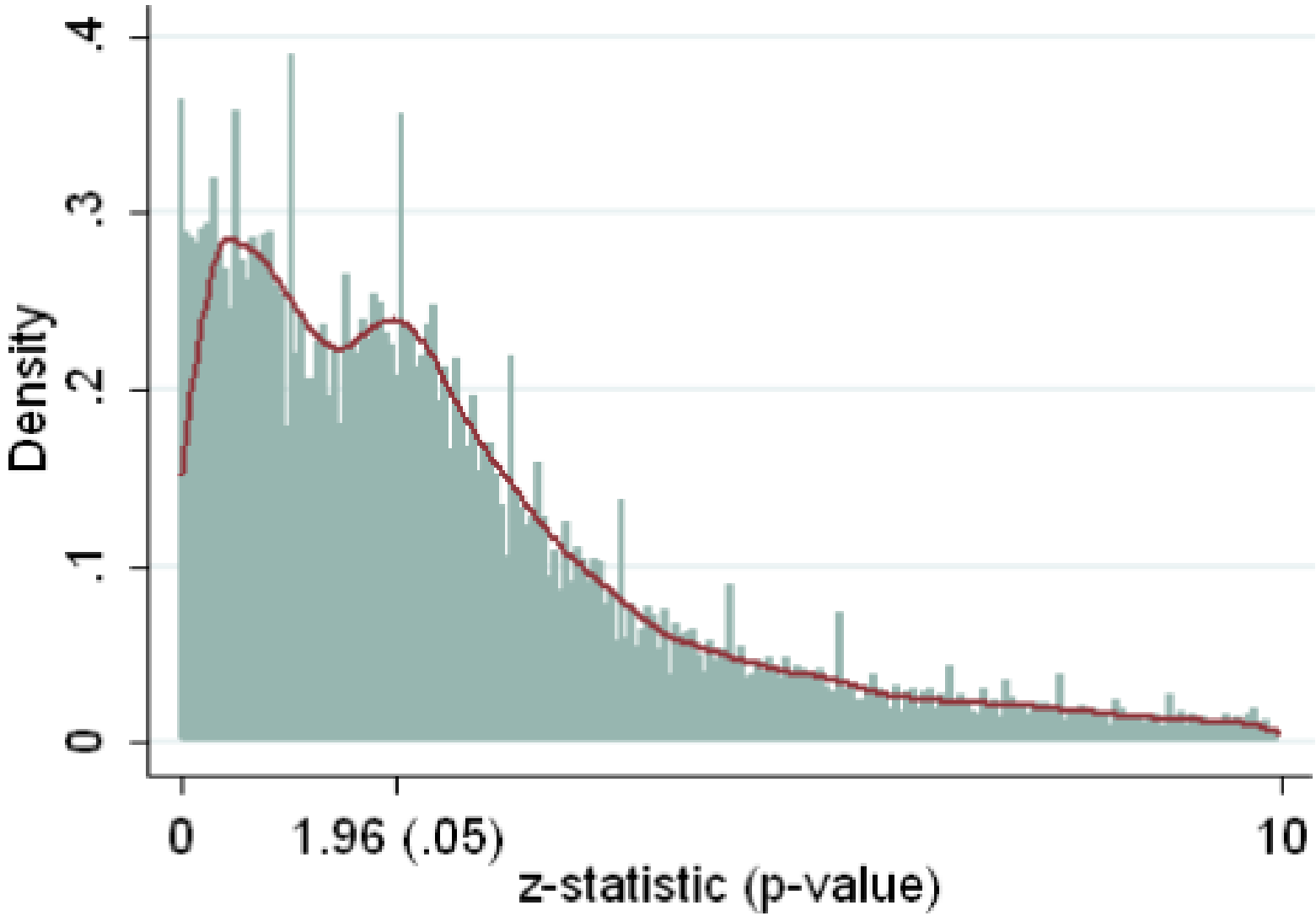
Preanalysis plans | *yy*

Two risks to science: "p-hacking" and the "file drawer problem"

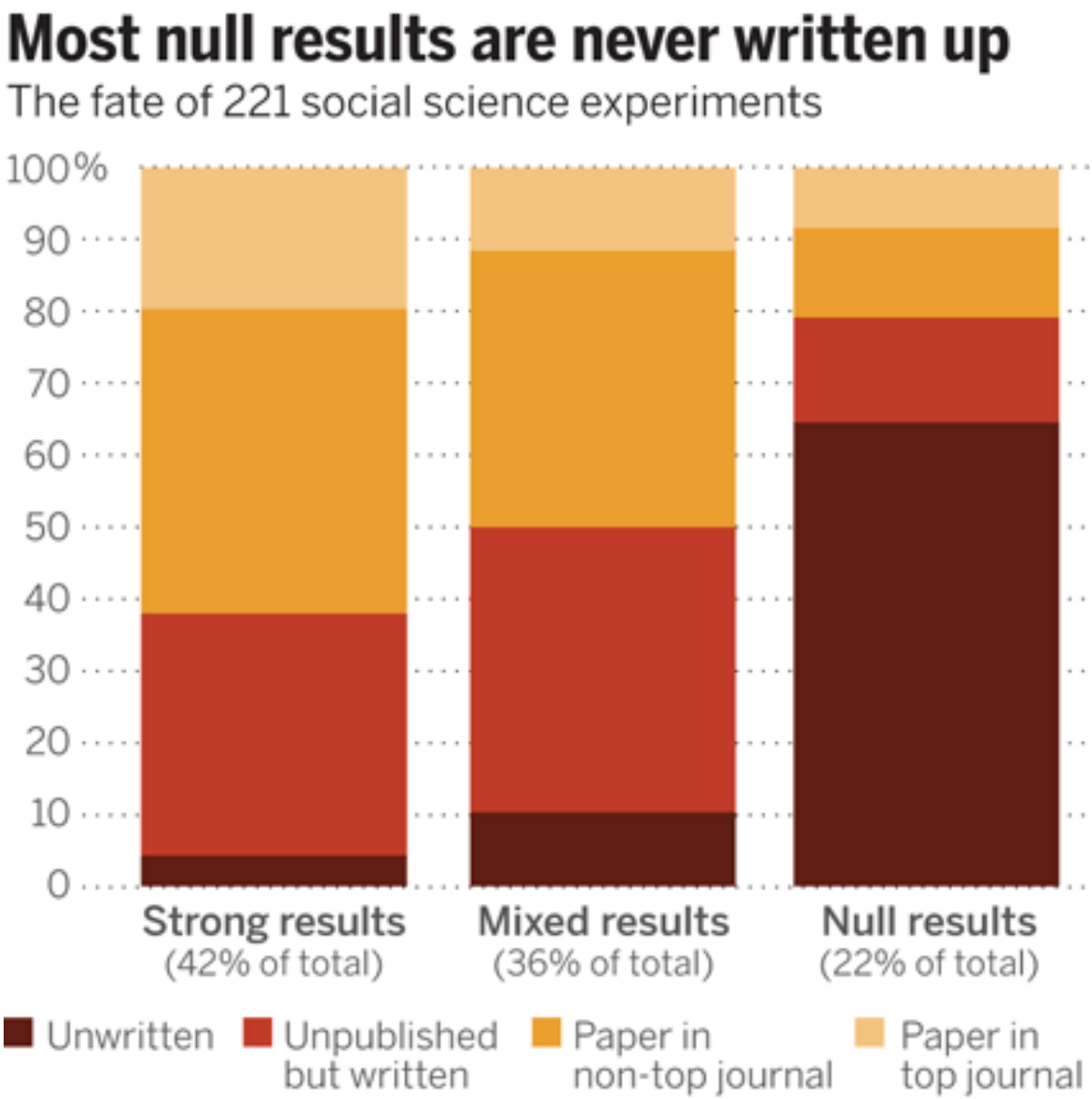
Partial solution: register your study and how you plan to analyze it in advance

yy

p-hacking | *yy*



File drawer problem | *yy*



egap EVIDENCE IN GOVERNANCE AND POLITICS A. Franco *et al.*, *Science* (28 August)

What to include in a PAP | *yy*

- Describe randomization, measurement, and analysis plans
- Use mock data to create mock tables and figures
- Power analysis

yy

Pivoting | *yy*

- Things often don't go according to plan!
- Go/no go decision
- Pivot to other questions, imperfect design for same questions

yy

Populated preanalysis plan | *yy*

Dutifully follow the PAP

Post on your website or public archive yy

Analysis and reconciliation | *yy*

Analyze as you randomize (including changes) yy

Reconcile PAP to final analysis

Communicating | *yy*

What you found, why it should be believed (design), and to whom/where the evidence applies

Who are the consumers of your evidence, who might change their decisions based on it? Are you reaching them?

yy

Archiving | *yy*

- Share data, code to enable reproduction of results
- Share materials to enable replicating study (intervention details, survey questionnaires, etc.)

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