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

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

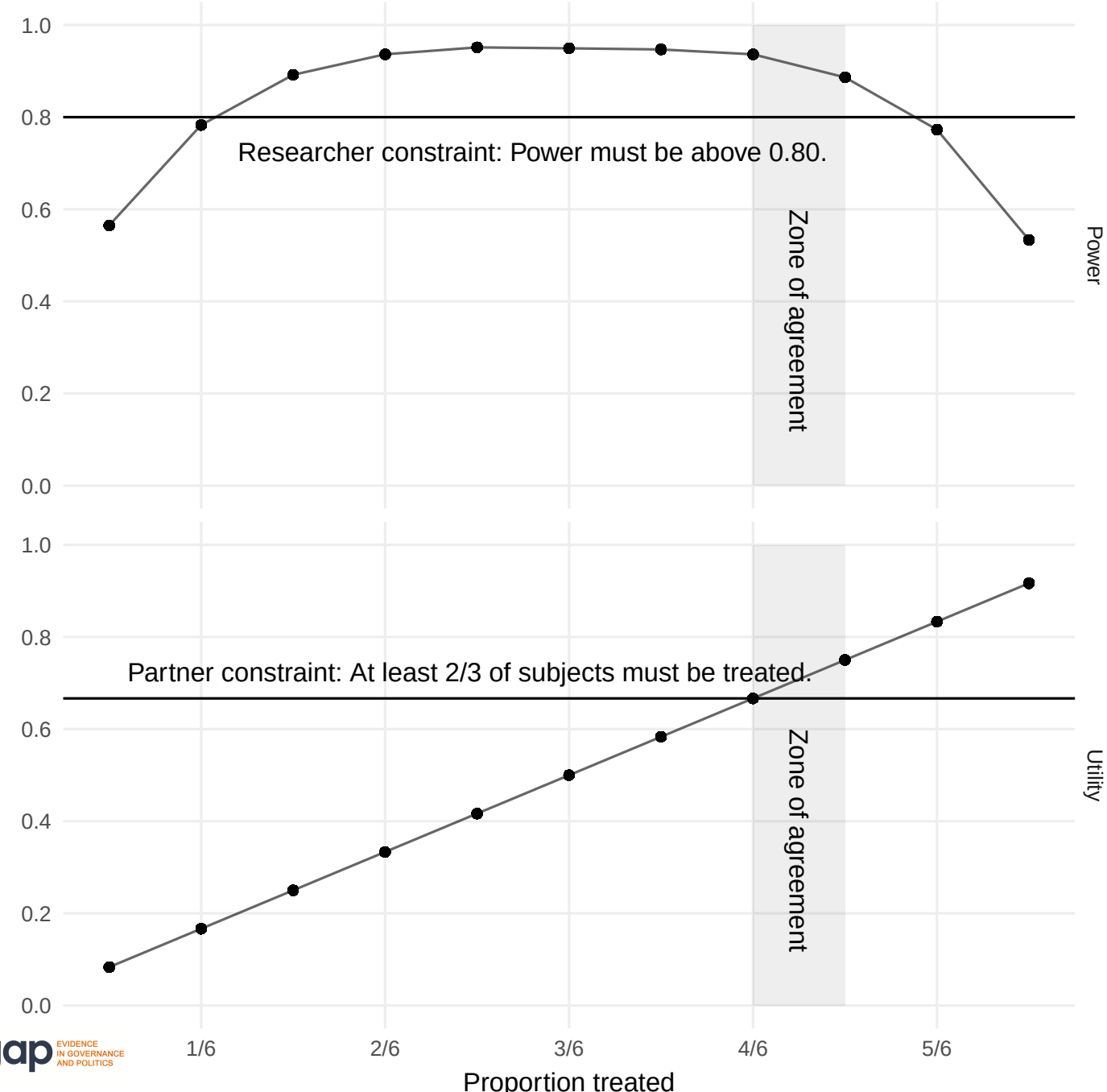
yy

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

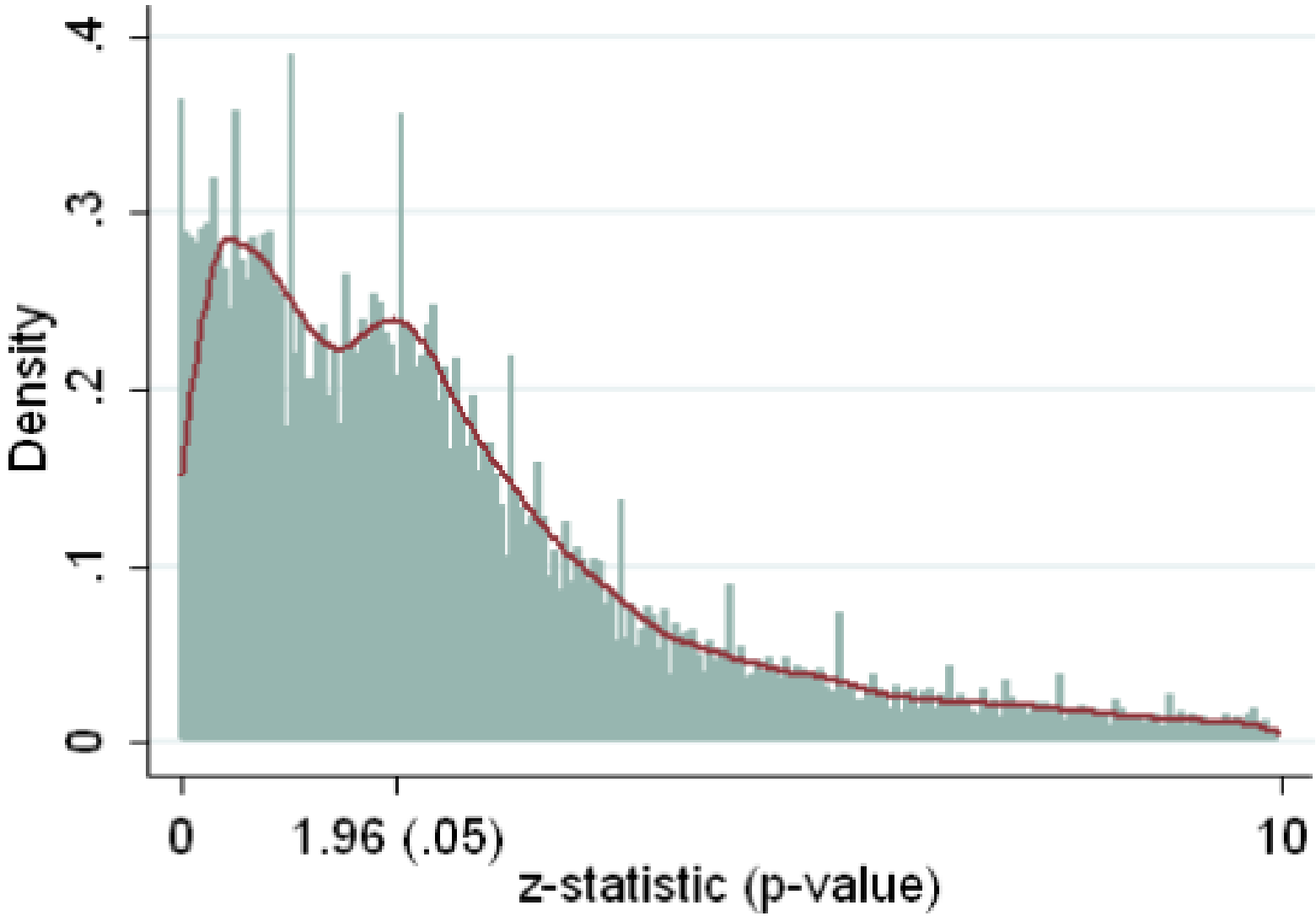
Preanalysis plans | *yy*

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

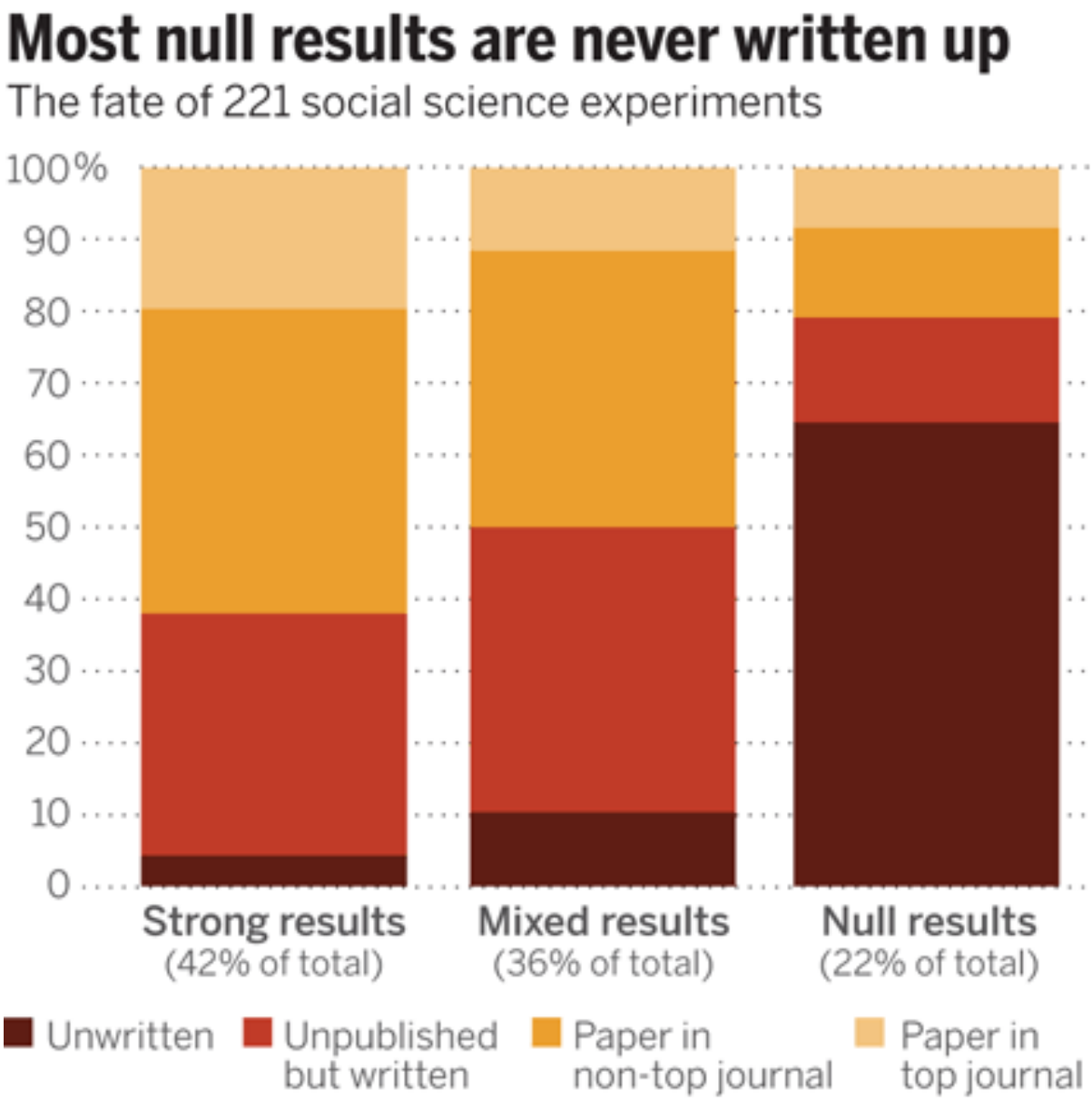
Partial solution: register your study and how you plan to analyze it in advance

yy

p-hacking | *yy*



File drawer problem | *yy*



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

Reconciliation with PAP | *yy*

Analyze as you randomize $\rightarrow$ changes

yy

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.)

yy