Registration, Pre-Analysis Plans and Reporting Guidelines

Introduction, Hands-on with the Open Science Framework (OSF) and AEA Registry

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Slides at https://goo.gl/aBQ3LR

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Little experiment [10mins]

Explanation to participants

Read and complete the sheet: DO NOT LOOK AT OTHERS SHEETS

Go to the website bellow and complete with your answers.

https://goo.gl/aj8W61

Explanation to researchers

You just participated in (highly simplified) version of **The Ultimatum Game**

The goal of the UG is to measure attitudes about fairness and/or expectations about (econ) rational behavior.

Our little experiment was trying to measure if the responses to the UG can be anchored by a completly irrelevant number:

The ID number at the beginning of your sheet!

Explanation to researchers

Treatment was receiving an ID number between 960 and 999.

Control receive an ID number between 10 and 49.

Outcome: Offer made in the UG

For the hands-on excercise, you can use this experiment, or work with your own paper/project.

Registration & PAP: What

What is a Registration and a PAP?

Registration:

PAP:

Registration & PAP: Why

Why Register? Publication Bias [10 min version]

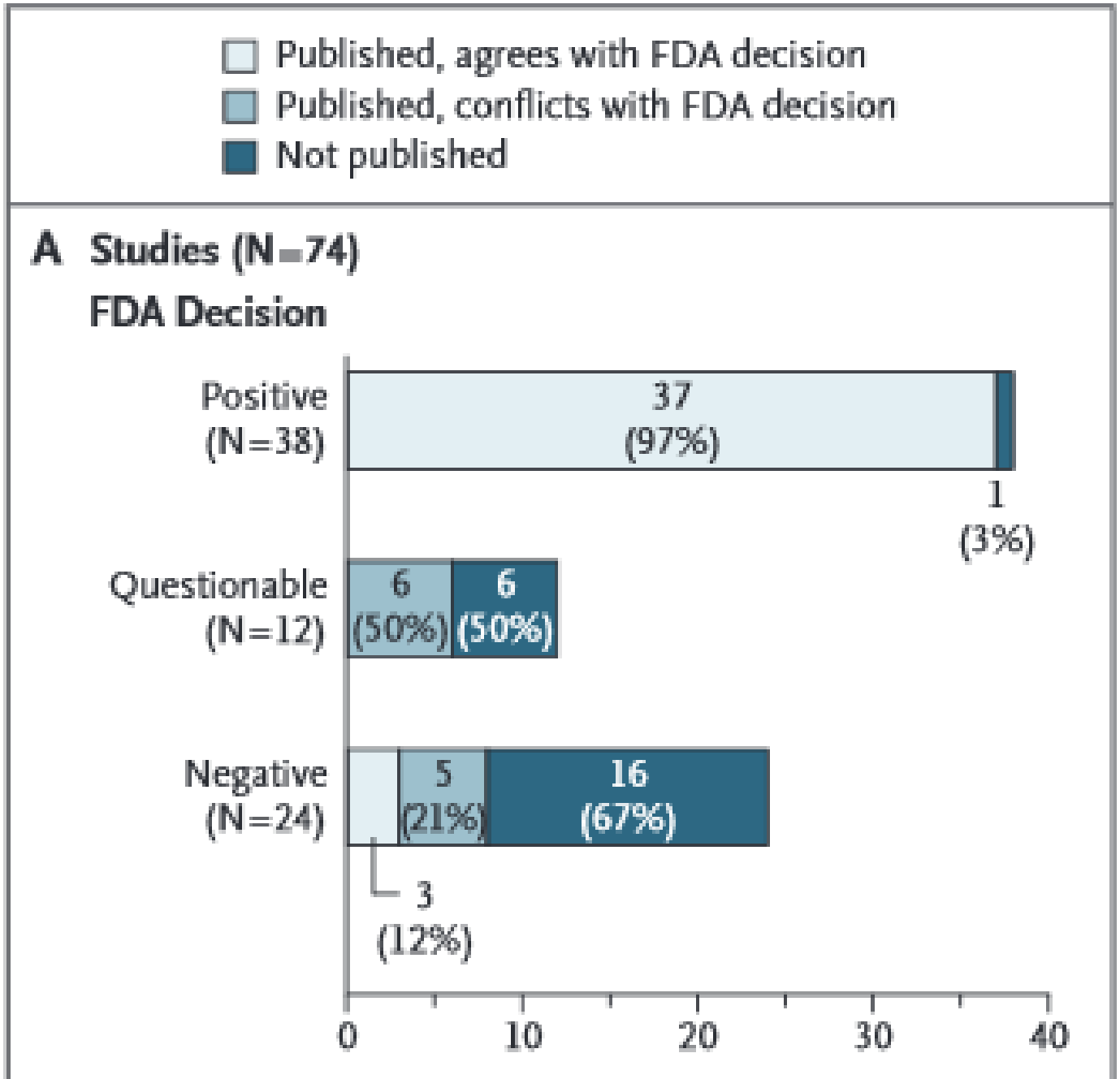
Effect sizes diminish with sample size (Gerber, Green, Nickerson 2001).

There is a higher fraction of rejected hypothesis tests in social compared to hard sciences (Fanelli 2010).

Published null results are disappearing over time, in all disciplines (Fanelli 2011).

The file drawer problem is large. (Turner et al 2008, Franco et al. 2014)

Publication Bias in FDA Aproved Drugs



Publication Bias Across Social Science

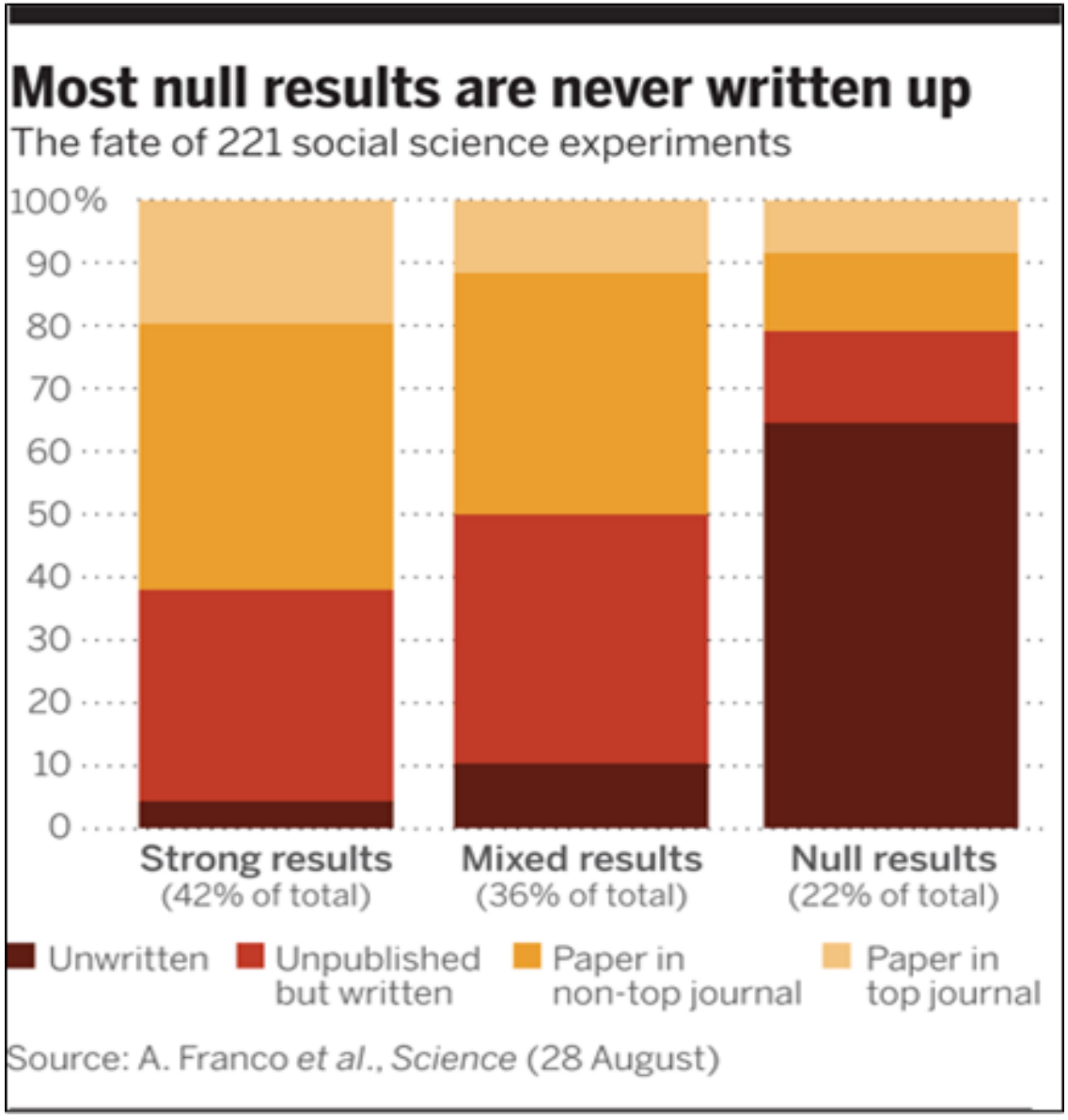


Figure 2:

Why Do We Need PAPs?

Outcome variable	(1) Mean for controls	(2) Treatment effect
Panel A: GoBifo "weakened" institutions		
Attended meeting to decide what to do with the tarp	0.81	–0.04^{+}
Everybody had equal say in deciding how to use the tarp	0.51	–0.11^{+}
Community used the tarp (verified by physical assessment)	0.90	–0.08^{+}
Community can show research team the tarp	0.84	–0.12*
Respondent would like to be a member of the VDC	0.36	–0.04*
Respondent voted in the local government election (2008)	0.85	–0.04*
Panel B: GoBifo "strengthened" institutions		
Community teachers have been trained	0.47	0.12^{+}
Respondent is a member of a women's group	0.24	0.06**
Someone took minutes at the most recent community meeting	0.30	0.14*
Building materials stored in a public place when not in use	0.13	0.25*
Chiefdom official did not have the most influence over tarp use	0.54	0.06*
Respondent agrees with "Responsible young people can be good leaders" and not "Only older people are mature enough to be leaders"	0.76	0.04*
Correctly able to name the year of the next general elections	0.19	0.04*

Figure 3:

Why Do We Need PAPs? The Social Planner View (Haushofer, 2017)

Benefits:

1. Improves transparency: clear ex ante what the researcher planned
2. Reduces false positives: fewer forking paths, less p-hacking
3. Reduces the filedrawer problem; others can ask what happened to your project.

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Costs:

1. Time cost. I don't think this is very large, see below.
2. Stifles exploratory work. I don't think this is true, see below.
3. Pre-specifying the wrong analyses (ex ante or ex post). This is potentially serious.

Reducing costs:

1. Time cost: make the PAP your methods section later.
2. Exploratory work: datamine to your heart's delight! Just be honest about it.
3. Pre-specifying the wrong analyses: Be honest about your thought process and hope for sensible readers/referees.

Hands-on Registration.

Based on a project of your own, or on our little experiment:

- Create a draft of using Open Science Framework at osf.io:
  - Open format
  - AsPredicted (will work with this one)
- Explore AEA Registry at www.socialscienceregistry.org

Registration of our Little Experiment

Using Aspredicted format:

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- **Sample size:** We will define our sample by the number of participants in the workshop.

How to do a PAP? Glennerster & Takavarasha Suggestions

Report:

- The main outcome measures.
- Which outcome measures are primary and which are secondary.
- The precise composition of any families that will be used for mean effects analysis.
- The subgroups that will be analyzed.
- The direction of expected impact if we want to use a one-sided test.
- The primary specification to be used for the analysis.

How to do a PAP? McKenzie Suggestions

World Bank Development Impact Blog

- Description of the sample to be used in the study
- Key data sources
- Hypotheses to be tested throughout the causal chain
- Specify how variables will be constructed
- Specify the treatment effect equation to be estimated
- What is the plan for how to deal with multiple outcomes and multiple hypothesis testing?
- Procedures to be used for addressing survey attrition
- How will the study deal with outcomes with limited variation?
- If you are going to be testing a model, include the model
- Remember to archive it

How to do a PAP? Specific Resources

- Pre-reg Challenge (emph IRB)
- RR at JDE

Difference between Registration and PAP?

- Key difference is the amount of detail/effort.
- Registration: very easy, goal is to address publication bias.
- PAP:
- It is more a matter of degree.

When should you do a PAP or a Registration?

Time dimention.

Research design dimension.

Reporting Guidelines [20mins]

Why Do We Need Reporting Guidelines?

Defines minimal set of elements required in a scientific paper. Helps with:

- Structured PAPs
- Replicability
- Meta-analysis

How to follow Reporting Guidelines

- CONSORT Guidelines & EQUATOR network.
- Recent APA guidelines.
- JDE suggested guidelines for register reports.

CONSORT Guidelines & EQUATOR network.

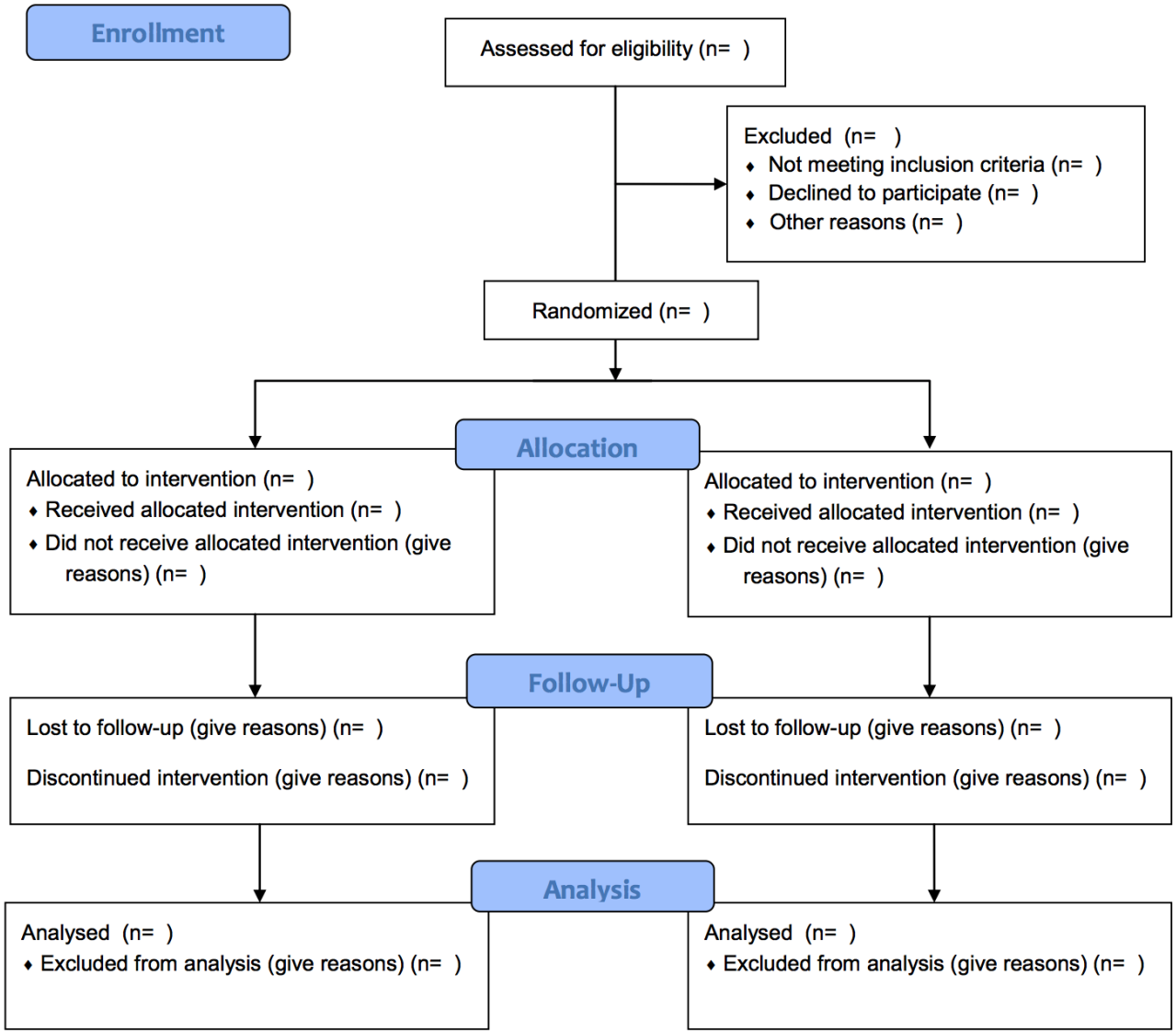

Figure 4:

CONSORT Guidelines & EQUATOR network.

CONSORT 2010 checklist of information to include when repor

Section/Topic	Item No	Checklist item
Title and abstract		
	1a	Identification as a randomised trial
	1b	Structured summary of trial design,
Introduction		
Background and objectives	2a	Scientific background and explanat
	2b	Specific objectives or hypotheses
Methods		
Trial design	3a	Description of trial design (such as p
	3b	Important changes to methods after
Participants	4a	Eligibility criteria for participants
	4b	Settings and locations where the da
Interventions	5	The interventions for each group wit
Outcomes	6a	Completely defined pre-specified pr
	6b	Any changes to trial outcomes after
Sample size	7a	How sample size was determined
	7b	When applicable, explanation of an

EQUATOR Network: website containing more than 300 other guidelines.

How

Registries: OSF/AEA/Others

Follow guidelines

Registries

Description

Guidelines