

# **Survey Experiments**

## **Theory, Advantages and Applications**

**Hector Bahamonde, PhD**

# Brief Introduction

## “Experimental Social Science”

- Hector Bahamonde.
- PhD in **Political Science**.
- **Senior Researcher** at INVEST.
- **Research Director of INVEST-Hub** (platform for (quasi)experimental research and interventions).
- I teach **statistical** and **experimental methods**.
- I publish on **political economy** and **democracy**.
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# Today's Agenda

## Survey Experiments

- **Overview:** What survey experiments are and why we should care.
- **Application #1:** Conjoint Experiments.
- **Application #2:** List Experiments.

# **Overview**

**Survey Experiments**

# Overview

## Survey Experiments

- What's a “survey experiment”?
  - “Researchers assign [survey] respondents randomly to **control** and **treatment** conditions.”
  - **Essentially, we randomize question wordings or possible answer choices.**
- What kinds of **advantages** do survey experiments have over “normal” surveys?
  - Spurious correlation
  - Social desirability bias, and others.
- What was the **role of technology** in popularizing survey experiments?

# Let's think about external validity

Define...and why is it important?

# Overview

## Survey Experiments: External Validity

- The authors identify **five challenges** in the context external validity:
  1. Scholars usually find “**short-term effects**” (?).
  2. Experimental designs usually exploit “**highly artificial settings**” (?).
  3. Scholars sometimes don’t include a “**control group**” (?).
  4. “**Spillover effects**” within the same survey (?).  
Is this something common? Why should we care?
  5. Scholars usually design treatments that are “**binary**” (?).  
As opposed to “**continuous**.”

# Overview

## Survey Experiments: External Validity

- Why would we like our results to be “**invariant across samples**”?  
Convenient vs. Representative.
- Why would “**convenient samples**” produce different results than, say, “**representative samples**”?  
Hint: What kind of individuals do “convenient” samples have?
- **Our potential problem:** results might be **different** in “**size**” and/or “**sign**” (?)  
And what do the authors find, anyways?

# Overview

## Survey Experiments: External Validity

Kevin J. Mullinix et al.

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- Effects **signs** and **sizes** are **comparable** across samples.
- How can we tell?  
Look at the Figure 1.
- Why is this **good news?**

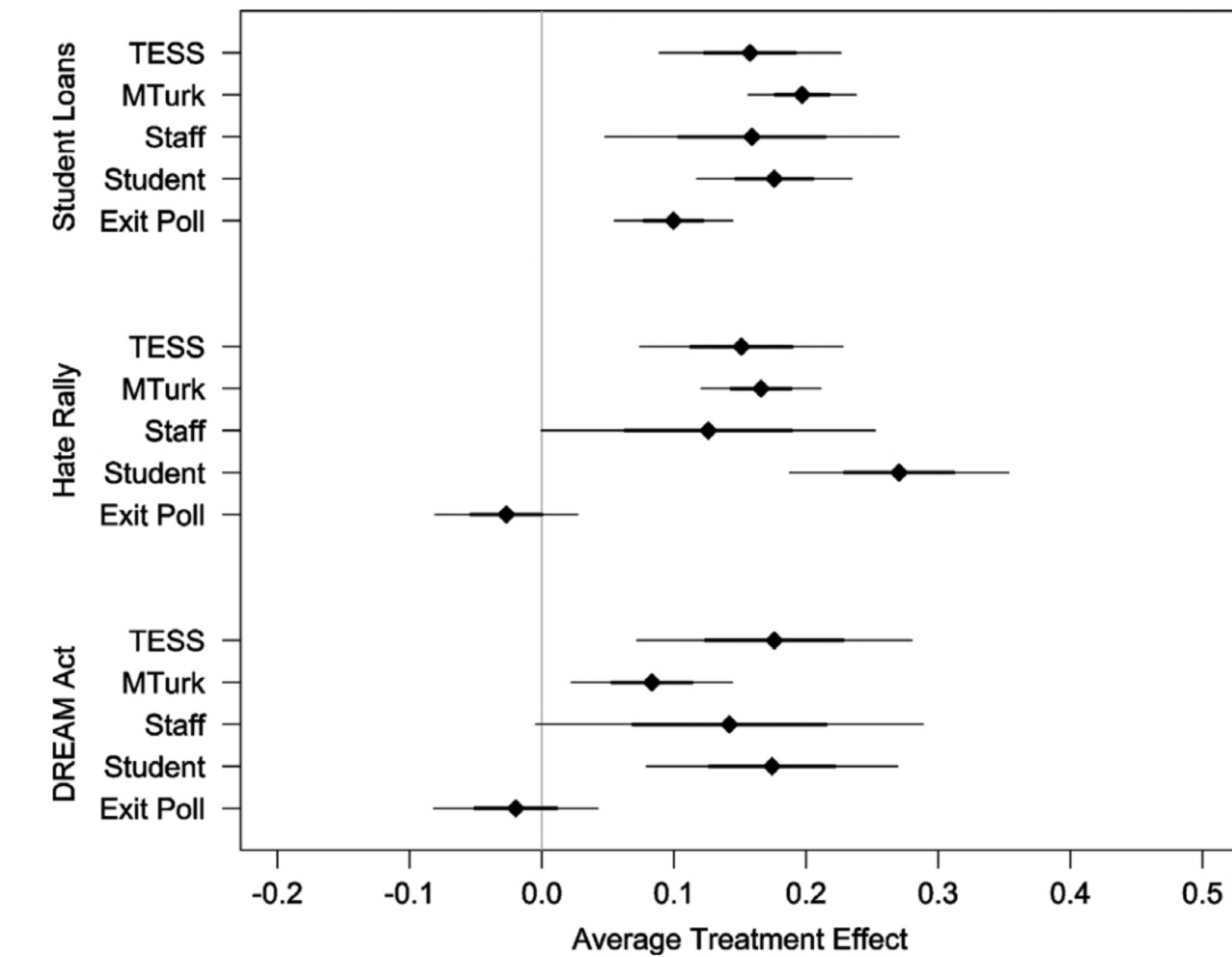


Figure 1  
Study 1 Results.

# **Conjoint**

## **Experiments**

# Conjoint Designs

## Overview

- What's a “**conjoint experiment**”?
  - Study “**multidimensional**” preferences and “**trade-offs**” towards political objects (?)
- What's **causal** about conjoints?  
What's being randomized here?  
✓ **Attributes**, but also their **order**—to avoid “**order effects**” (?)

# Conjoint Designs

## “Tasks” and “Attributes”

- How does a conjoint experiment look like?
  - “Conjoint table”
- What are participants asked to do?
  - Tasks and attributes.
  - Why might conjoint experiments help decreasing “social desirability bias”?

	CANDIDATE A	CANDIDATE B
Military Service Experience	Served in the Navy	Did not serve
Supports Creating Pathway to Citizenship for	Unauthorized immigrants with no criminal record who entered the U.S. as minors	All unauthorized immigrants with no criminal record
Previous Occupation	Lawyer	Lawyer
Age	53	45
Gender	Female	Female
Race/Ethnicity	White	Hispanic/Latino
Sexual Orientation	Gay	Straight
Position on Climate Change	Ban the use of fossil fuels after 2040, substantially reducing economic growth	Impose a tax on using fossil fuels, moderately reducing economic growth
Supports Government Healthcare for	Only Americans who are older, poor, or disabled	Only Americans who are older, poor, or disabled
Prior Political Experience	U.S. Senator	No prior political experience

**Tendency** of survey respondents  
to **answer** questions in a manner  
that will be **viewed favorable by**  
**others**, for ex., the interviewer.

**What kind of questions are  
more likely to suffer from  
social desirability bias?**

**Why is it important  
to decrease that  
bias?**

**Table 2.1** The list of possible attribute values in the Democratic primary experiment.

Age	37, 45, 53, 61, 77
Gender	Female, Male
Sexual Orientation	Straight, Gay
Race/Ethnicity	White, Hispanic/Latino, Black, Asian
Previous Occupation	Business executive, College professor, High school teacher, Lawyer, Doctor, Activist
Military Service Experience	Did not serve, Served in the Army, Served in the Navy, Served in the Marine Corps
Prior Political Experience	Small-city Mayor, Big-city Mayor, State Legislator, Governor, U.S. Senator, U.S. Representative, No prior political experience
Supports Government Healthcare for	All Americans, Only Americans who are older, poor, or disabled, Americans who choose it over private health plans
Supports Creating Pathway to Citizenship for	Unauthorized immigrants with no criminal record who entered the U.S. as minors, All unauthorized immigrants with no criminal record, No unauthorized immigrants
Position on Climate Change	Ban the use of fossil fuels after 2040, reducing economic growth by 5%; Impose a tax on using fossil fuels, reducing economic growth by 3%; Promote the use of renewable energy but allow continued use of fossil fuels

**Attribute Set**

	CANDIDATE A	CANDIDATE B
<b>Military Service Experience</b>	Served in the Navy	Did not serve
<b>Supports Creating Pathway to Citizenship for</b>	Unauthorized immigrants with no criminal record who entered the U.S. as minors	All unauthorized immigrants with no criminal record
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**Conjoint Table**

# Conjoint Designs

## Distributions

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Kirk Bansak, Jens Hainmueller, Daniel J. Hopkins, and Teppei Yamamoto

- Should we **randomize all attributes using a “uniform distribution”?**
- **“Unrealistic profiles” (?)**  
Frequency and unrealistic combinations.
- How do we **solve** these ^ issues?

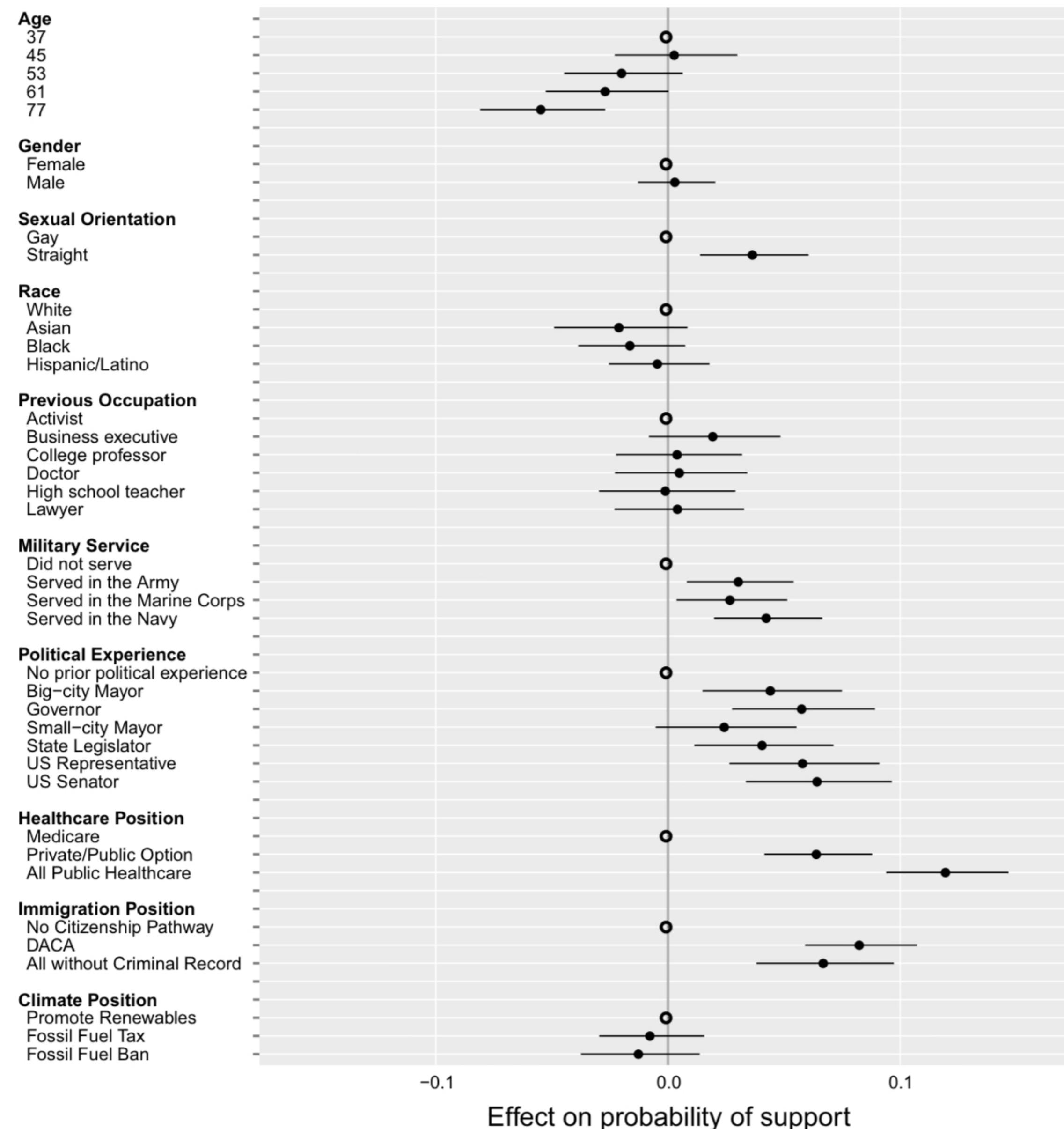
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# Conjoint Designs

## Interpretation

- How do we **interpret** conjoint experiments?
- “**AMCE**” (?)
- AMCE represents the effect of a particular attribute value of interest against another value of the same attribute while holding equal the joint distribution of the other attributes in the design, averaged over this distribution as well as the sampling distribution from the population.
- **Reference category** issue.



**Figure 2.3** Average marginal component effects of candidate attributes in the Democratic primary conjoint experiment (forced choice outcome). DACA = Deferred Action for Childhood Arrivals.

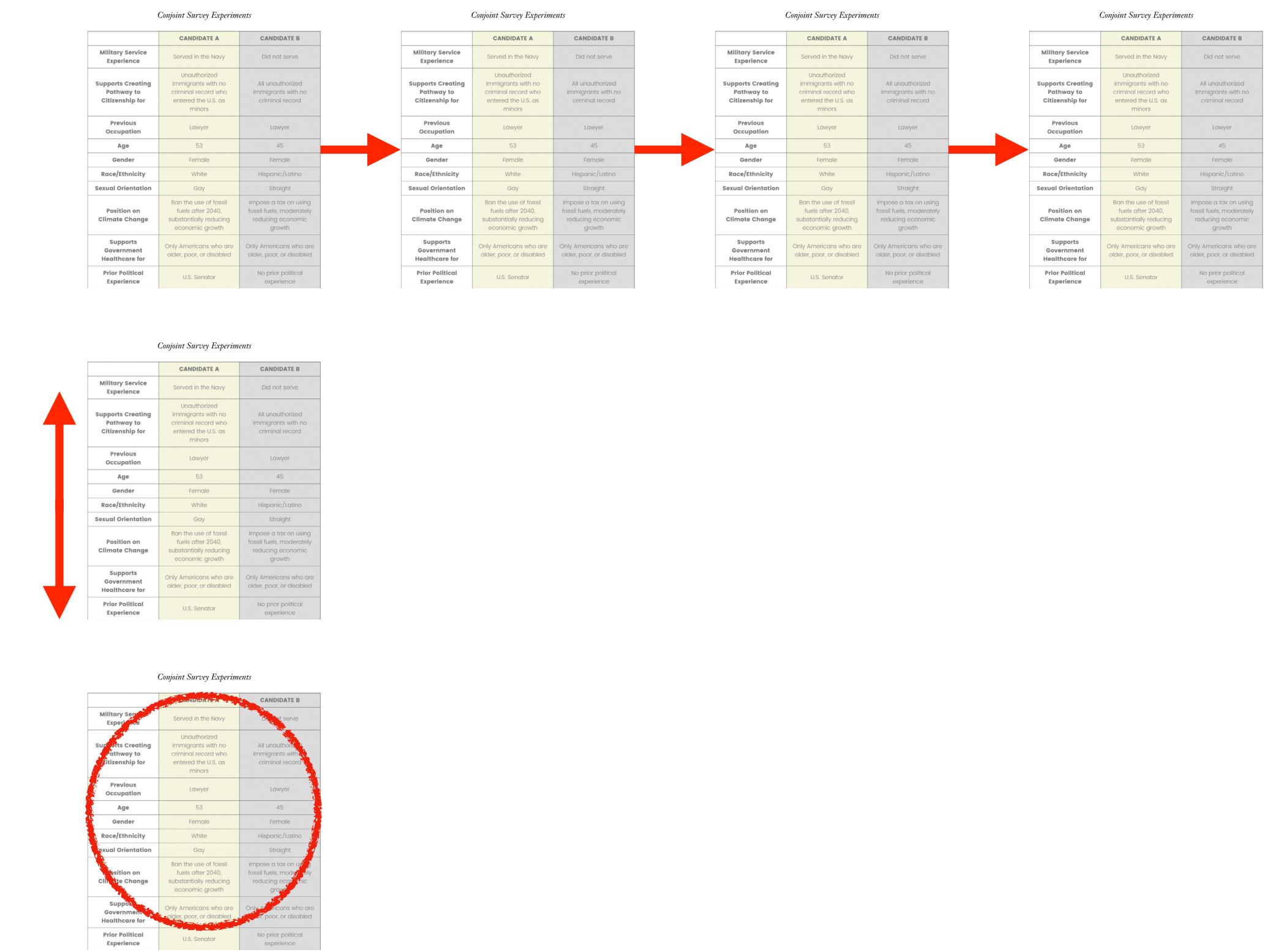
# Conjoint Designs

## Assumptions

**1. Stability and no carryover effects:** subjects are not affected by prior tasks.

**2. No profile order effects:** order in which profiles appear can be “ignored.”

**3. Randomization of the profiles:** choices are independent of the profiles.



# List

## Designs

# List Experiments

## Overview

- **What** are list experiments good for?  
What do they solve?
- **How** do list experiments **decrease** social desirability bias?
- How does a list experiment **look like?**

# List Experiments

## Design

Now I'm going to read you three things that sometimes make people angry or upset. After I read all three, just tell me HOW MANY of them upset you. (I don't want to know which ones, just how many.)

- (1) the federal government increasing the tax on gasoline
- (2) professional athletes getting million-dollar-plus salaries
- (3) large corporations polluting the environment

How many, if any, of these things upset you?

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**Treatment**

# List Experiments

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How many, if any, of these things upset you?

## Control

Same set of instructions.

## Treatment

# List Experiments

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**Treatment**

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## Control

**Notice what's being asked: answer is concealed.**

Intention of concealment is repeated three times.

## Treatment

# List Experiments

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**What kind of inferences do we get using the “simple difference in means estimator”?**

# List Experiments

## Analysis

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How many, if any, of these things upset you?

**What does the “new statistical approach” have to offer when analysing list experiments?**

# List Experiments

## Assumptions and Design

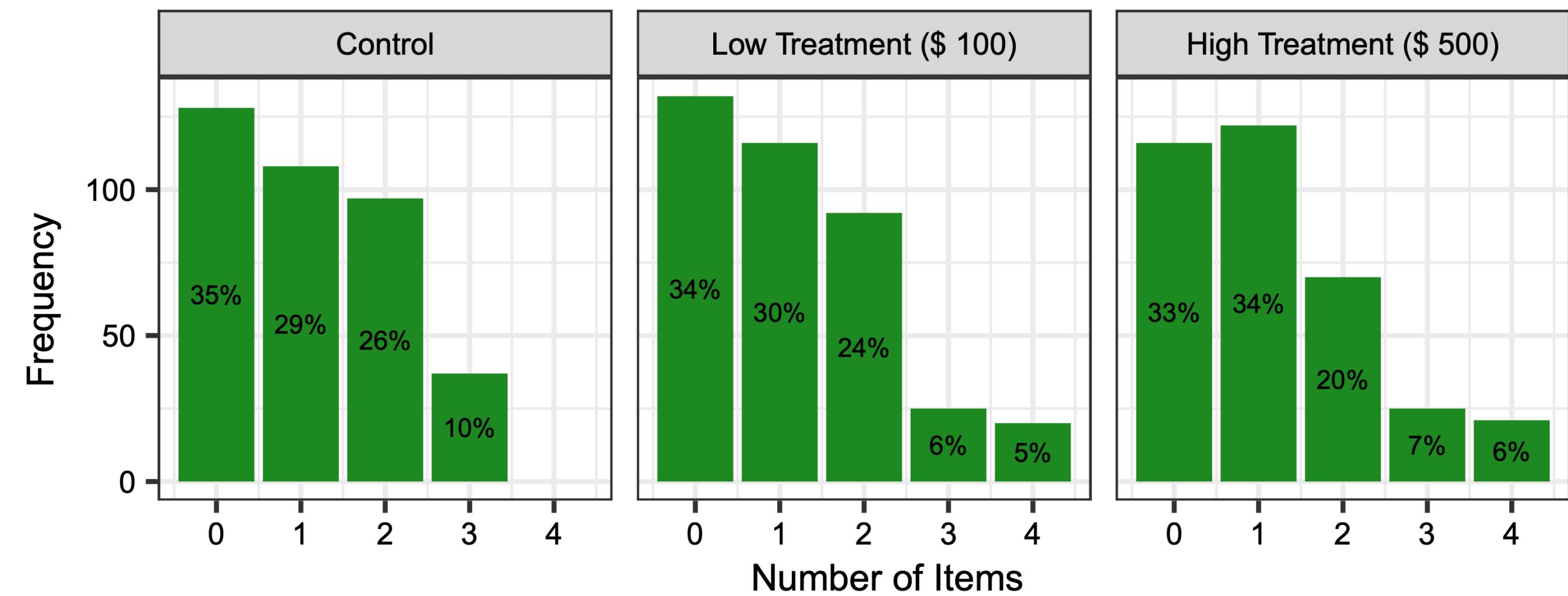
- What **assumptions** do we need to make list experiments work?
  1. **No design effects:** responses to control items don't change once the sensitive item is added.
  2. **No liars.** **It applies only to the sensitive item**, not to control items! Is this assumption reasonable, and why?
  3. **No ceiling/floor effects.** Items are “not uncontroversial” or “too controversial” (?).

# List Experiments

## Assumptions and Design

Still for sale: the micro-dynamics of vote selling in the United...

- How does it **look** when we have a good design?



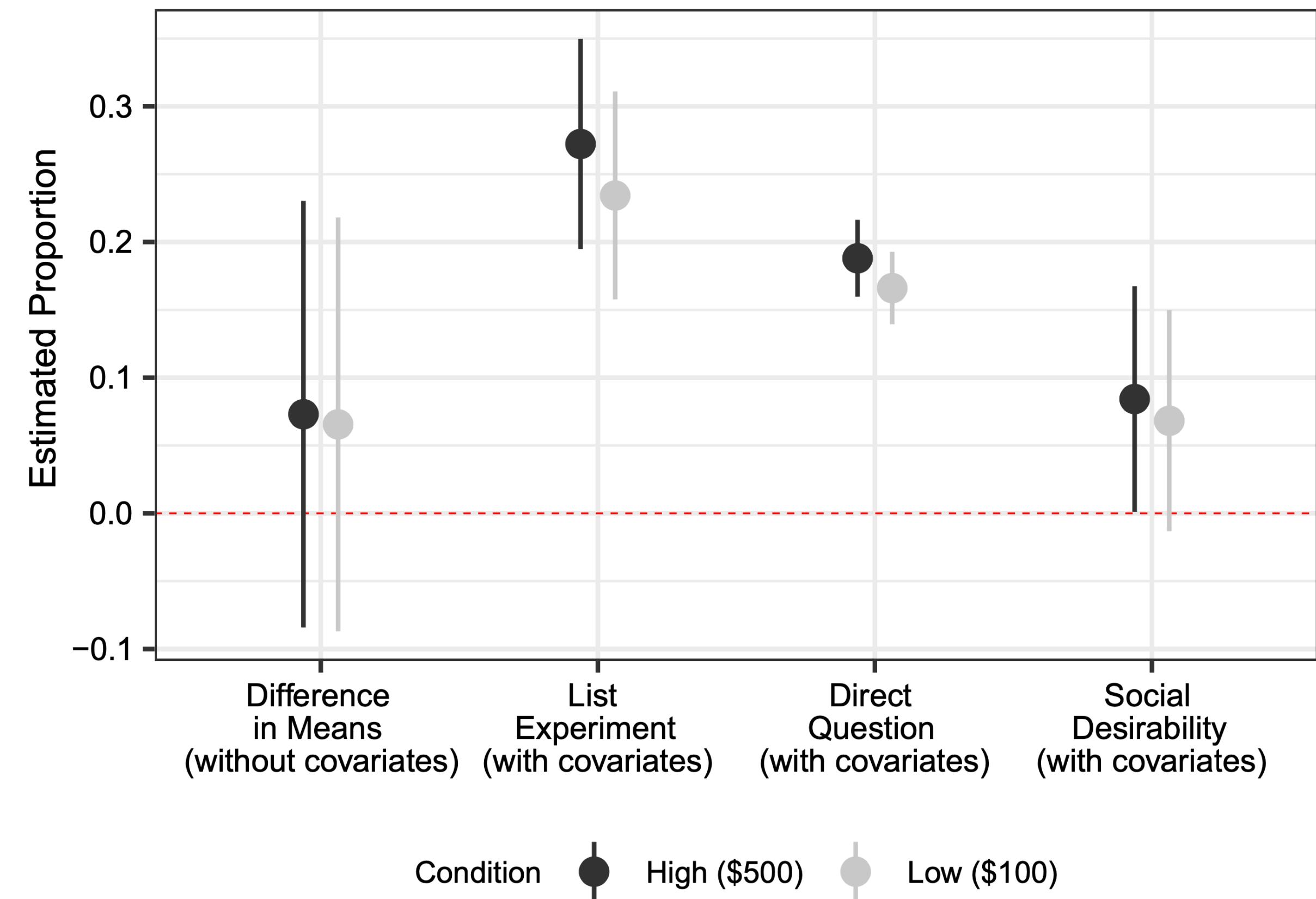
**Fig. 3** Frequency and percentages of subjects declaring how many (if any) illegal things they would do.  
*Note* notice that the X-axis denotes the number of items, not which ones. Percentages show proportions per condition

# List Experiments

## Assumptions and Design

- Authors suggest to **incorporate a "direct question."** Two issues arise:
  1. What kind of information does the **direct question contribute to?**
  2. Does the direct question **bias our results?** How can we make sure it doesn't?

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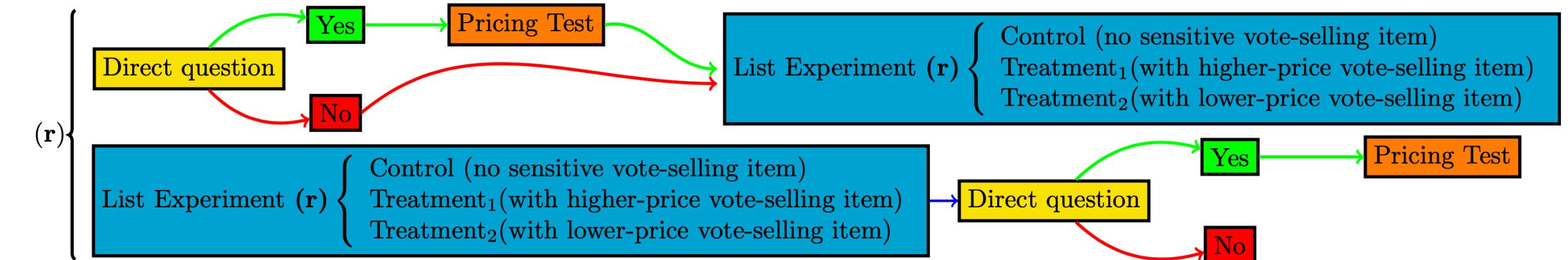


# List Experiments

## Assumptions and Design

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  1. What kind of information does the **direct question contribute to?**
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# Thanks