

# Experiments designed to help the participants

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# Why experiments?

- ▶ Are your programs effective in helping refugees?
  - ▶ How to find out?
- ▶ Possibility 1: Compare the outcomes of those who got the programs to others who didn't.
  - ▶ Problem: These groups might be different for other reasons.
- ▶ Think about a doctor prescribing a medical treatment.
  - ▶ Then the patients who got the treatment might die more often.
  - ▶ But only because they were more sick to begin with!
  - ▶ “Selection problem.”

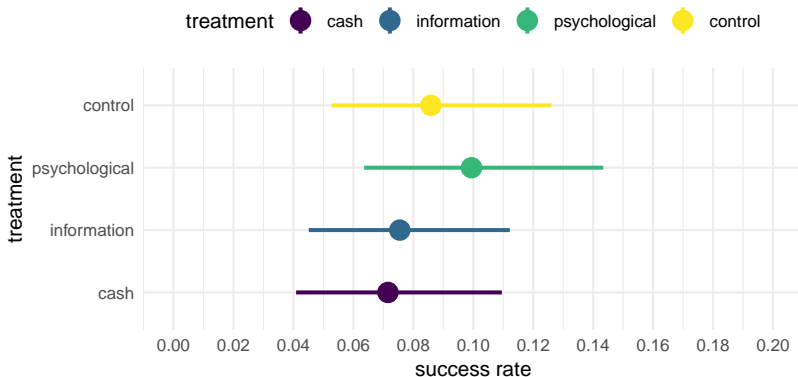
# The standard way of doing experiments

- ▶ Possibility 2: Randomized experiment.
  - ▶ Create groups that are ex-ante similar, by randomly assigning participants to groups.
  - ▶ To compare apples with apples.
- ▶ Conventionally:
  - ▶ Divide the sample equally between treatments.
  - ▶ Wait until experiment is done.
  - ▶ Then compare average outcomes.
  - ▶ Use statistical tests to see whether there was any effect.

# Drawbacks of conventional experiments

- ▶ This approach gets the causal effects right.
- ▶ And it gets precise estimates for every policy.
- ▶ But we need to wait a long time until we learn something.
- ▶ And we might not do the best we can for our participants.
- ▶ Think again of a medical experiment:
  - ▶ Suppose in the first few months, everybody who got the new treatment died.
  - ▶ Then you better stop the experiment!!!

# Preliminary estimates for our experiment



- We already have suggestive evidence that the psychological treatment performs better.

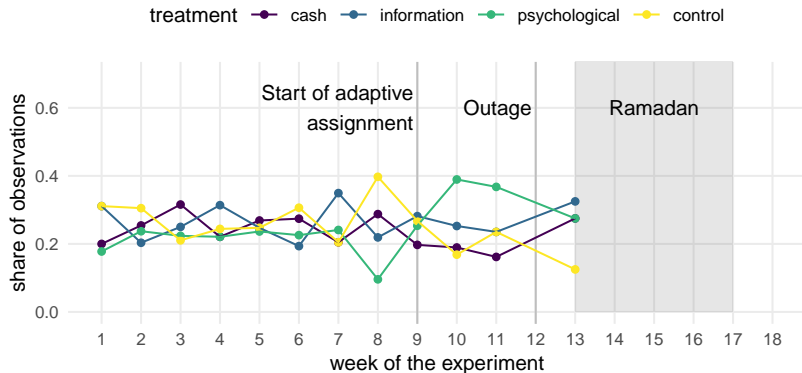
## A different objective: Helping participants

- ▶ The standard approach is optimal when you want to get precise estimates of policy effects.
- ▶ But we want to instead help participants as much as possible.
- ▶ Cf. Immanuel Kant:  
*“Act in such a way that you treat humanity, whether in your own person or in the person of any other, never merely as a means to an end, but always at the same time as an end.”*
- ▶ This requires using the information we already have, when deciding which policy to assign people to.
- ▶ But we also want to continue learning, to do better in the future.

# The exploitation / exploration tradeoff

- ▶ Possibility 1: Assign each participant to the policy we currently think is best.
  - ▶ Good for the current participant.
  - ▶ Problem: We might stop learning, getting stuck with a sub-optimal policy.
- ▶ Possibility 2: Assign participants to each policy with fixed probability over time.
  - ▶ Good for learning policy effects.
  - ▶ But not optimal for current participants.
- ▶ Possibility 3: Optimal strategies shift to better performing policies over time.
- ▶ For instance *Thompson sampling*:
  - ▶ Assign each treatment with probability
  - ▶ equal to the current probability that it is optimal.

# Assignment probabilities in our experiment



- As we learn that the psychological treatment does better, more participants are assigned to this treatment.



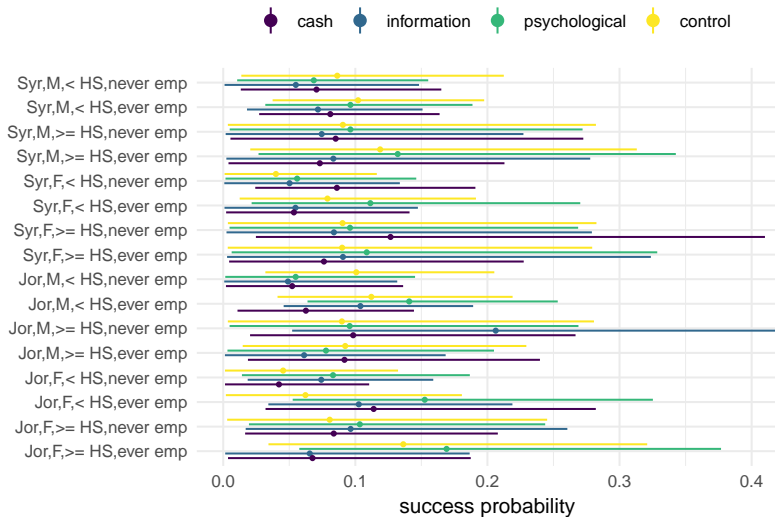
# Targeting

- ▶ Not every policy is good for everybody.
- ▶ Some things work better
  - ▶ for those with more or less work experience,
  - ▶ for those with more or less education,
  - ▶ for women or men.
- ▶ We can do better than just going with “one size fits all.”
- ▶ Try to get each group what works best for them.

# Combining information

- ▶ Problem: For each group and policy, we might only have very few observations.
- ▶ This means averages are unreliable estimates.
- ▶ Solution: Combining information between groups.
- ▶ Estimate effect on a group by combining
  - ▶ their own average outcomes,
  - ▶ and the average outcomes for everybody else.
- ▶ *Bayesian hierarchical models* do this optimally.

# Effect heterogeneity in our experiment



# THANK YOU

For all your work in making this experiment happen!