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."

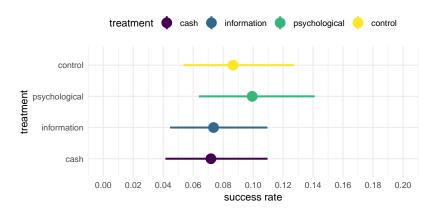
The standard way of doing experiments

- 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.

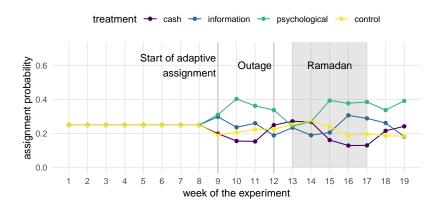
A different objective: Helping participants

- ► 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.

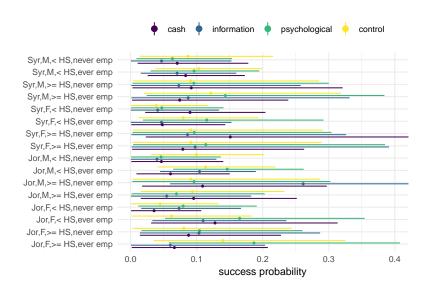
Targeting

- Not every policy is good for everybody.
- Some things work better
 - ▶ for those with more or less work experience,
 - for those with more ore 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!