

Decisions

- Decided to start experiment on 11/14 to ensure the experiment is complete prior to the Thanksgiving holiday (experiment will run over the course of 10 days and finish on 11/23 with the final “complete experiment” text on 11/24)
- Compliers are those who provided a phone number in the enrollment survey, confirmed their phone numbers in the time allotted (9 hours) and who provided at least one baseline outcome measure. We are concentrating the experiment to just compliers.
- We are including the 1 non-complier who did provide & confirm a phone number but did not provide outcome measures to avoid confusion (since we informed all those who confirmed phone numbers that we’d be texting them for 10 days). We will exclude this participant during the analysis
- We decided to block on whether
 - participants prepare meals
 - the percentage of meat consumed on average in their baseline outcome measures (for the ones observed)
 - whether they are ketogenic (chose to include as a placebo)
 - Whether they are vegetarian (chose to include as a placebo)
 - the time the participant usually finishes eating
 - whether the participant has a food allergy
- To ensure we have power in our experiment, we decided to only have one treatment level (fact + recipe) and thus we have 50% of participants in control & 50% in treatment. This decision was made based on the results of the pilot study.
- We are doing a differences-in-differences design with a panel data approach to try to get as much information from the 7 days of recorded outcomes as available - using clustering on an individual basis with block fixed effects. The blocks are a matched pair design.
- Even if we get partial outcome measures from participants, as long as we get both the 1st and the 3rd measure, we should count this as a measure being received (please confirm if we should do this, so we can make the appropriate adjustments for folks who did give partially completed outcome measures)

Observations

Phone Number Confirmations

- Most participants confirmed that we can reach out via phone within the 9 hour window provided to respond before collecting the first round of outcome measures
- One participant responded the day after and has not been included in the study (to ensure we have timely participants being considered (i.e. compliers))
- Another participant responded on 11/17 with a confirmation 4 days later (and not included in the study)

Outcome Measures

- Have a lot of participants “liking” our “thanks for letting us know” messages; also see participants responding with “you’re welcome”
- Have participants who will send texts to correct any mistakes they’ve made in recording outcome measures (and we’ve updated the outcome measures accordingly)
 - E.g. “meant to type 7 instead of 6 for the total number of meals”
- Participants have been very good at working with texting interface
- Some participants respond very late, past the time that the window for responses has expired (in which case, they send the first outcome measure, which has been recorded)
- One participant out of 82 did not provide any baseline outcome measures to the study--all others gave at least one
- One participant shared a comment when their eating habits for the day were unusual
 - E.g. “was at a conference and couldn’t prepare my meals like I normally do”
- One participant who has classified herself as “pescatarian” still seems to have eaten meat during certain outcome measures--either they misunderstood and classified fish as “meat” or they legitimately made exceptions. Would be worth asking in the post-survey.

Treatment Administration

- Occasionally receive comments in reply to treatment administrations
 - e.g. a comment that “this makes me want to eat more meat”
- Have gotten feedback that the confirmation requests sometimes come before the treatment text, despite adding a 5 second pause between sending the two messages. Not sure how to fix this at this time except to increase the pause between sending the two messages, which may introduce more issues.

Completing Experiment

- Prompted one user to send outcome measures she forgot to send the night before
- Got a smiley face in response from one participant :)

Post-Experiment Survey

- From a friend in the treatment group, the treatments were “not enough to overpower my understanding that I should eat a better diet” and “there were a couple [of the messages] that, as a subject, sounded pretentious”. Specifically for treatment #6, “The peas. I’m never eating an equivalent amount of peas. Even if “amount” is the appropriate replacement measure, the comment made me roll my eyes and want to eat a steak.”
 - Also commented that the treatment from day 3 “rings false to me”
 - Also commented “And overall, I think the text message format may have affected your intervention somewhat: the info affected my understanding and could have directly or indirectly led to different decisions. But I didn’t have opportunity (or necessarily interest) to try any of the recipes, and none of them prompted me to think “I don’t want Cajun Corn Chowder, but I actually would like some Corn Chowder from my mom’s recipe.” “So for the time constrained class exercise, I think this was great.”

- Commented “It wouldn’t surprise me if the backfire effect is correlated with those [societal issue measures]”
- Had another participant in the treatment group give a negative response about like there was a lot of “agenda-pushing” and that they were “less likely to be a vegetarian” after having been leaning towards becoming a vegetarian
- Overall had a positive response to the experiment, but may have been disproportionately from the control group

General

- People are much faster at responding during the day than during the evening
- Most participants are relatively consistent with when they respond
- Participants seem to be better about responding in a timely manner once they’ve gotten in the habit of responding (but need to confirm)
- Received feedback from participants I know that simply observing eating habits has caused some people to be more conscious about their eating habits (and change their eating habits)

Twilio & Texting Platforms

- Night before launching the experiment (11/13) had a carrier outage on toll-free numbers due to maintenance. This is something that happens occasionally and may happen again.
- Evening of 11/16, Verizon had “delays receiving inbound SMS sent from Verizon devices in the US towards Toll-Free numbers”, as reported by Twilio support--manually recorded outcome measures for the participant that informed me of this, but others may have been affected. Issue was resolved by morning of 11/17 when treatment was administered.
- T-Mobile carrier maintenance evening of 11/17 that may affect toll-free numbers
- T-Mobile carrier maintenance evening of 11/18 that may affect toll-free numbers
- Single participant has failed to receive SMS messages (failed to be delivered)--have reached out to support for inquiry, but not sure if this participant can be recovered (may have blocked number or be out of cellular range)
- Sprint carrier maintenance evening of 11/21
- Emergency Toll-free maintenance in US morning of 11/23

Suggested Improvements

- Consider blocking by carrier in the event of a carrier outage
- Inform participants how much time they have to answer text messages
- Inform participants to respond to outcome measures surveys when finished eating
 - Had a participant make this suggestion, as they generally were recording baseline outcome measures prior to finishing eating--although I think it’s more important to be consistent with how outcome measures are recorded across participants.

- Given that we have information about when participants usually finish eating, set up texting platform such that requests to record outcome measures coincide with when participants are usually finished eating (did not do this for simplicity)
- Allow & encourage qualitative comments from participants as they see fit.
- Record which carrier participants use in the enrollment survey (or use the Twilio Carrier lookup tool, although this only works for USA numbers) & use this to block on carriers
- Add retry logic to messages to resend message after 1 hour if no response given (only once)--attempted to this but found not simple way to implement this in Twilio
- Use a shortcode instead of toll-free numbers (shortcodes are the proper way of doing this sort of experimentation to avoid carrier filtering, but cost \$500+licensing+setup to get to work, whereas toll-free numbers are \$2 each with no setup required)
- Motivate participants in phone number confirmation to participate with the \$25 gift card incentive
- Offering alternate form of communication with experiment administrators in the event of a technical malfunction of the texting platform (e.g. texting admin's personal numbers)
- Consider blocking by number of responses (out of 3) given in the baseline