Assignment 7, 8, 9: Social media and self-experimentation

Inspired by Allcott et al. (2020), you will do an experiment on yourself by turning off---or changing---some aspect of your social media environment and then studying how it impacts you. In assignment 7, you will design and pre-register your experiment. Then in assignment 8, you will conduct the experiment and report the results. Finally, in assignment 9, you will measure what happened after the experiment ended and reflect on what you learned.

Here are a few things to note before we introduce the assignments.

- Before doing this assignment, you must read Roberts (2001) ("Surprises from Self-Experimentation: Sleep, Mood, and Weight"). This is posted on Canvas. This paper will help you learn more about the opportunities and challenges involved in self-experimentation, and it will help you design and reflect on your own self-experimentation.

- If you are unable or unwilling to do self-experimentation involving your social media usage, we have prepared alternative assignments that are presented at the end of assignments 7, 8, and 9. Also, you can stop participating in the self-experiment at any time and switch to the alternative assignments with no penalty to your grade.

- Here's the schedule:
  Submit Assignment 7 by Wednesday, Nov 10 and start collecting pre-treatment data
  Finalize your experimental design after precept
  Begin the experiment and collect data for at least 3 days
  Submit Assignment 8 by Wednesday, Nov 17
  No assignment or precept on Thanksgiving week
  Submit Assignment 9 by Wednesday, Dec 1 (final assignment of the semester)

- You should read assignment 7, 8, and 9 before beginning assignment 7.

- We plan to write a blog post about this activity so that others can learn from our experience. We have done this previously with a class project from the last time we taught this class. You can read that here: https://freedom-to-tinker.com/2017/09/19/breaking-your-bubble/ If we would like to quote anything you wrote, we will ask for your explicit permission and you are free to say no. Please feel free to ask about this if you have any questions.

- Remember this self-experiment is a class activity. It is not going to be the same rigor as a real scientific study. In running this self-experiment, there may be points where there is a tension between scientific rigor and the value of this as a learning activity; you

should always choose the approach that will maximize learning for you. For example, if this was a real research project, we would have put much greater care into standardizing the measurements. But, from the perspective of a learning activity, you learn more by designing your own study. Also, there may be points where there is a tension between scientific rigor and making the assignment too burdensome. We have tried to strike a reasonable balance. These kinds of tensions---between rigor and learning and between rigor and participant burden---are things we can and should discuss in precept.

- These assignments may deal with emotional issues like stress, loneliness, and anxiety. You should know that Princeton makes available numerous services to help support you through difficult moments. You can learn more about confidential mental health services available on campus at https://uhs.princeton.edu/counseling-psychological-services. You can learn more about other forms of support available through the Office of Religious Life at https://religiouslife.princeton.edu/.

Assignment 7: Design

We will use the Allcott et al. study as a template that you can personalize to suit your own life. Now you should design your own self-experiment about social media usage.

Step 1) Design an intervention. Allcott et al. had people delete Facebook for about 1 month. You could stop using a specific social media platform. However, you are welcome to get a bit more creative too: you could try to somehow alter how you use one platform (e.g., turn off notifications) or you could change how you use multiple platforms.

There are many possible interventions, so what makes a good intervention? Broadly speaking, good intervention will lead to research that is both interesting and important. We expect that there will be two main motivations for intervention: scientific and wellness. If you have a more scientific motivation, you could imagine designing an intervention that would allow us to expand our knowledge of how and why social media impacts people. If you would like to design a scientifically-motivated intervention, you should review the list of "outstanding questions" on Kross et al. (2021, p 63). If you have a more wellness-based motivation, you could try to design an intervention that will improve some specific aspect of your personal wellness.

Whatever you decide, your intervention should be described so clearly that someone else (e.g., your preceptor) could implement it in exactly the same way you did. You should describe what you will do and how long you will do it for. Also, you should not do an intervention that you expect will harm you.

When considering the timing of your intervention, be sure to consider how weekdays and weekends may impact your result. Ideally, you will have some weekday and weekend data for both the pre-treatment and treatment periods.

Step 2) Pick your outcomes. Allcott et al. had nine families of outcomes variables (see Sec 1.C, p 639). **You must have at least three families of outcomes**, and each outcome could be made up of several measures. You must keep the first two families of outcomes below but you can add as many additional families or outcomes as you'd like.

- **Subjective well-being**. One of your families of outcomes should be subjective well-being which you should measure using what Allcott et al. call the SMS questions (but you don't have to do them over SMS): SMS happiness, SMS positive emotion, and SMS not lonely (see p 642 for exact wording).
- **Substitute time uses**: Another one of your outcomes should be substitute time uses, which you can assess by reporting which activities you did more of and less of during the experiment (note: Allcott et al. had a slightly more complicated way to measure it).
- **Your choice**. You can choose the final family of outcomes and what questions or methods you use to measure it. You can measure it either with survey data or digital trace data (e.g., data from something like Apple Screen Time). If you decide to measure outcomes using survey questions you should not make up your own, because that is hard to do well. In survey research, it is much better to directly copy what was done in a high-quality study (and cite the study). This way your work is more comparable with

others and you should assume that the other researchers thought carefully and probably tested how to word the question and answer choices. So, in this case you are welcome to directly copy outcomes and questions from Allcott et al.

You are welcome to have more than three outcome families if you wish.

Step 3) State your hypothesis/hypotheses. What do you think is going to happen? Be sure to state your hypothesis/hypotheses in a way that allows them to be judged against the data you collect. If your hypothesis can't be wrong, then it is not specific enough.

Step 4) Before your experiment begins, start measuring your outcomes. This gives you some "before" data which you can compare to the data during and after the treatment. Given the timing, you might not have many days of pre-treatment data.

You will submit your design at the regular time (Wednesday at 11am) by filling in the template below. We will discuss the designs in precept so that you can hear about what your classmates are doing. Then after your precept you will have 24 hours to submit a revised design, if you wish. After that your experiment should begin.

Here's a template you can use to submit your design.

Assignment 7: Designing social media self-experimentation
Sociology 204: Social Networks
Upload to Canvas by Wednesday, November 10, 2021 at 11am
Please upload your homework to Canvas.

PUID: [fill in here]

Intervention: [fill in here, remember this should be described clearly enough that someone else (e.g., your preceptor) could follow the same intervention exactly]

Motivation: [Here you should explain a bit more context about your design. Why did you pick this particular intervention and outcome? What shapes your hypothesis?]

Outcomes:

Family	**Variable name**	**Question text**
Subjective well-being	SMS happiness	Overall, how happy do you feel right now on a scale from 1 (not at all happy) to 10 (completely happy)?

Subjective well-being	SMS positive emotion	What best describes how you felt over the last ten minutes? 1: Lonely/left out 2: Shameful/guilty 3: Absorbed in doing something worthwhile 4: Sad 5: Loving/tender 6: Bored 7: Happy 8: Angry 9: Worried 10: Other positive feeling 11: Other negative feeling 12: Other neutral feeling
Subjective well-being	SMS not lonely	How lonely are you feeling right now on a scale from 1 (not at all lonely) to 10 (very lonely)?
Substitute time uses	Time use	Open ended question: How did the experiment change how I used my time today?
Outcome family 3		

Hypothesis/hypotheses: [What do you think is going to happen? Be sure to state your hypothesis/hypotheses in a way that allows them to be judged against the data you collect. If your hypothesis can't be wrong, then it is not specific enough.]

Possible alternative results: [How confidence are you in your hypothesis? What else do you think might happen? Remember that Roberts talks about the many surprises of self-experimentation.]

Difficulty: [How difficult do you think it will be to run this treatment? You could compare this to other challenging things like staying awake when you are tired or performing a difficult athletic challenge.]

We will assess your template using the following rubric.

An excellent template will have the following elements:

- Intervention that is described clearly enough that it could be replicated by someone else (e.g., your preceptor)
- A clear motivation that is closely related to the design
- Adding a family of outcome measures that is clearly related to your intervention and hypothesis

- A hypothesis that is clear enough that we will be able to assess it as right or wrong after running the experiment
- Thoughtful consideration of alternative results

100: all the desired elements
90: most of the desired elements
80: many of the desired elements
70: a few of the desired elements

Alternate assignment 7

Allcott et al. (2020) was not the first paper to randomized impact evaluation of Facebook. Pick 5 of the earlier papers presented in Table A1 in the online appendix. Compare and contrast these studies in terms of their designs and what they found, and write a summary of no more than 3 pages.