**Everything we’ve spoken about as of 03/25/24**

We’ve decided to break up the paper into two parts: 1. Describing the difference between partisans along the lines of perception, contact rates, and mask usage during the pandemic and how these might be impacted by congressional voter context and 2. Showing how these differences can lead to very different rates of disease contagion and mortality rates in SIR models. For part 2, Ayesha shared the code for a heterogenous mixing model.

For part 1, we are using multivariate regressions to describe the relationship most accurately between political affiliation and health behaviors. Democrats and Republicans generally differ in several key areas such as race, age, gender, level of education, percentage of Hispanics, size of household, and whether they live in densely urbanized areas. However, their likelihood of being employed is similar, though the types of jobs they hold may vary. When members of one party, like Democrats or Republicans, live in districts primarily controlled by the opposite party, their characteristics tend to align more closely with those of the majority party in that area. Therefore, we will control for the following:

1. Race
   1. Hispanic versus not Hispanic
2. Gender
3. age
4. Employment status
5. Rural versus urban
6. Case counts
7. Mask mandates
8. Respondent household size
9. Educational attainment

We will be adding in these variables in three phases. First, a baseline model that includes only exogenous controls that allows us to see the most straightforward “truth” of the relationship. Second, a model that controls for sociodemographic variables. Third, a model that controls for county-level factors.

Given that the results do not change too much when we use the “national” sample versus the pooled sample, we’ve decided to use the pooled sample for the larger sample size. This means we’ll be utilizing weights that make this sample nationally representative (weight\_pooled). We’ll also be controlling for where the sample was collected, the day it was collected, and calendar month.

In part 2, we are using a heterogenous mixing model (SIR variant), designated as groups R and D, to examine the dynamics of disease contagion under varying protective behaviors. Within each group, compartments are further differentiated into "Protected (P)" and "Unprotected (U)" states to simulate the impact of protective measures, such as mask usage and vaccination, on the transmission and infection rates of a disease. Individuals in both groups may adopt protective behaviors through two primary mechanisms: (1) in response to observed deaths within a specific time window, highlighting the role of perceived threat on behavior change; and (2) via contact with other protected individuals, indicating the social influence on the adoption of preventive measures.

This model allows for variations in the rate of contact and the propensity to adopt protective behaviors between the groups. Additionally, the fraction of the population belonging to each group is variable, enabling the exploration of scenarios with differing population compositions of Republicans and Democrats. A key aspect of the model is the inclusion of homophily—the degree to which individuals within a group interact predominantly within their own group versus with those from the other group. However, we do not have information on whether people interact with other partisans (we’ll have to make some assumptions here).

According to Ayesha’s code, an important concept is protective behavior (mask-wearing mostly), which not only reduces the likelihood of transmission and infection by 30% but also varies in adoption based on two mechanisms: the number of deaths observed within a certain timeframe and contact with individuals already practicing protective behaviors. The rate of adopting protective measures differs between the two groups in her code; group A shows a lower threshold (80 deaths) for adopting protective behavior in response to fatalities, while group B requires a higher threshold (100 deaths). We have not yet decided how we will arrive at these thresholds for groups R and D. We’ll also need to decide how to assign differences in waning behavior between the two. Does waning behavior involve use counting contacts in a model where we adjust for prevalence?

**3/27/24**

We decided to see if either incidence rates (new cases) or death rates tell us more about people's contact rates and whether they wear masks. We chose to look at the new cases happening right before we collected our data, instead of using all the cases added up from before. We adjusted these numbers by the size of the county's population, making them per 100,000 people, and added these to our model.

Because these rates were highly right-skewed, I logged them to get a more normal distribution.

For the sake of making interpretation easier, I made turned proportion of contacts carried out with a mask into a percentage.

We found that the new cases in the week before we gathered our data were a slightly better predictor than the prior week. I need to update our model to include similar numbers for death rates.

In short, our models now use a new number that shows the new cases in the county for the week before we collected our data. To decide on the specific week, we took the middle date of when we were collecting data and counted 7 days back from there to get our numbers.

**Feedback from PAA (04/18/24)**

* There might be a possible reporting error that might be correlated with party.
  + Might be useful to look at the difference between what people say they’re doing and what they’re actually doing (contact reduction versus actual contacts)
    - Idea: By geographical area
    - Different waves of BICS
    - Social desirability bias
      * Acknowledge/accept that it’s a limitation and be clear about it
      * Vary by party
      * Politics predicts pressure
      * How strong would the bias have to be to see such a big difference between republicans and democrats in our data (sensitivity analysis)
        + Simulate adjusted contacts/masks based on assumed mechanism of bias
        + Might show you need a really big effect to have results meaningfully change
    - Cases by partisanship?
  + We did not ask political party (did not prime)
    - Ongoing data collection to see whether partisanship has continued post-pandemic
* The discussant was interested in finding out how these differing mortality rates could impact political outcomes.
  + How many deaths would it take to swing an election?
  + Outside the scope of this paper
* Isn’t homophily important? Democrats aren’t interacting with Republicans at the same rate as exposure.
  + Being surrounded by Republicans doesn’t necessarily mean you’re interacting with them.
  + What to do?
    - Vary the parameter in hypothetical manner
    - Blau paper
      * Structural feature of big and small groups
        + Smaller groups more likely to interact with the larger group
    - Obtain a parameter from the literature
    - Idea: look at UCNets political homophily measures
    - Need to look more closely at residential segregation
      * What’s the connection between residential segregation and contact rates
        + Skim at Jon Zelner work
* To make the paper generalizable beyond COVID, it would be useful to tweak the parameters of the hypothetical disease being spread.
  + What if it was a deadlier pandemic? What if the spread was faster?
  + Can’t get away from COVID, but we can make an effort to make more generalizable using hypotheticals

05/09/24

* PAA feedback
  + Addressed above
* Papers on modeling
  + Concern
    - Is it really partisanship or is it a proxy for concern?
      * Similar insights?
      * Relationship between concern and behaviors
    - Look at this in the data and see descriptive
    - Is concern a predictor of behavior
      * Gap smaller or bigger for democrats and republicans?
        + Include into the descriptive
        + Could be a “virtue” signal thing if effect of partisanship
* Update outline
  + Do we want independents?
    - 3 group model
  + Would it make sense to have the model come first?
    - Test a hypothesis to test the fact that this really matters
* Think about what kind of journal
  + Soc journal
    - None of the papers are “about” the pandemic
    - AJS? ASR?
      * Differential equation models
      * Would they care about not fitting to data?
        + Paul Dimaggio papers
  + Reach out to Mara Loveman, Chris Mueller and get feedback
    - Get the papers that are relevant to cite

5/16 notes

* UCNets has measures of political homophilyA white background with black text

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* A table with numbers and text

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  + Is this helpful? Not exactly comparable
  + Not primary analysis
    - To help put results into context
    - Good to see the descriptive from this but not focal feature
* More interesting to see range of homophily rather than one number
* Soc journals
  + Framing
  + Important that you have a robust lit review
    - None of us are a political sociologist
  + Look for articles that are similar then find a journal that matches
  + ASR vs AJS vs Social Forces
    - ASR accepts more diverse papers
  + Social forces publishes on networks more often, social conflict, politics and political sociology
    - Same with Social Problems
    - Social Indicators research might be a good fit as well
  + Social networks?
    - More technical
    - Not first choice
  + Sociological science
    - Fast decision
* Look for general journals as alternatives
  + Nature human behavior
  + Science advances
* Incorporating concern
  + Concern is not 100% correlated with party
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  + A grid with red blue and green dots

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* People to talk to:
  + Josh, Mara, Claude, Delia
* Modelling
  + Stratify by…
    - Age?
    - Concern?
  + Why model?
    - To show hypotheticals
    - To describe
* Next steps
  + Ayesha: comment the code on a simple model
    - plots
  + Chris: look over the code to understand the models, think a bit more about a story
  + Dennis: look over code to understand models
* Story:
  + Why it’s important to consider political orientation
    - Hypotheticals based on polarized population