COHORTS AND CULTURAL CHANGE

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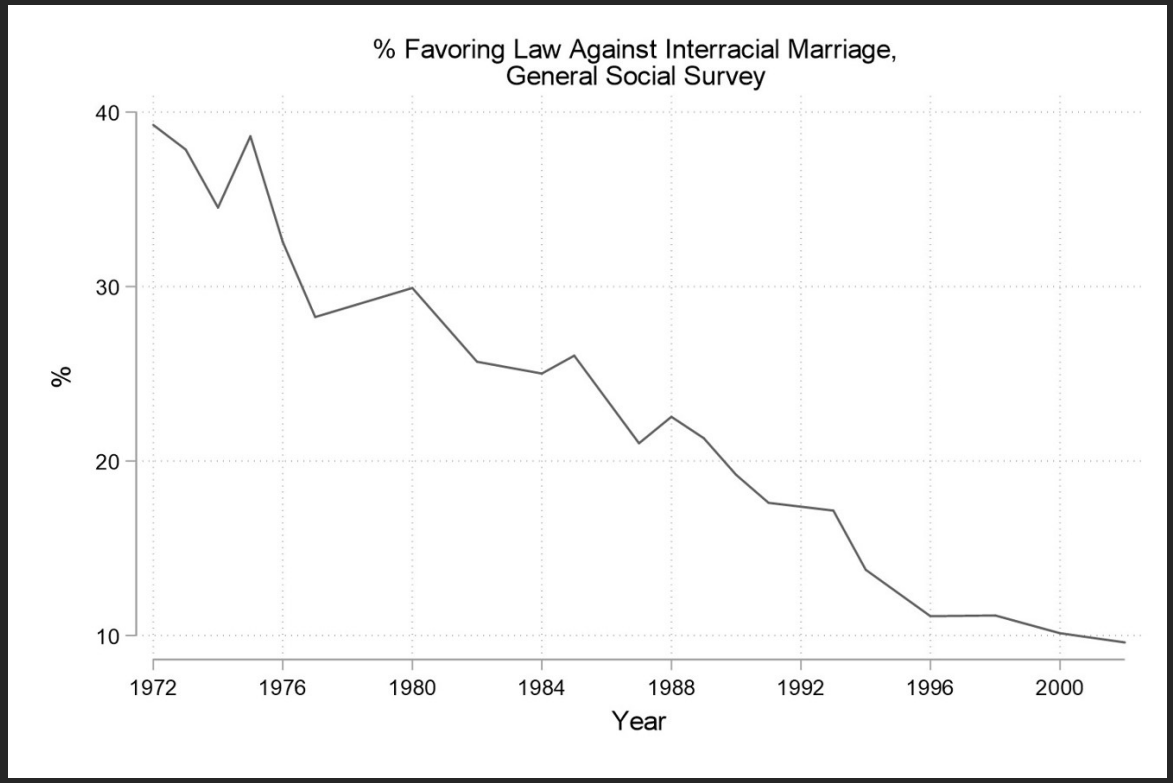
OBJECTIVES

EARLIER WORK

MORE RECENTLY (2016-)

COHORTS AND CULTURAL CHANGE

COMPETING MODELS OF CULTURAL CHANGE



- **Active updating:** individual response to “zeitgeist”
- **Settled dispositions:** demographic replacement

AND YES, BEFORE YOU ASK...

I *am*, in fact, familiar with Max Planck's (almost) quote that science advances one funeral at a time.

THE AGE-PERIOD-COHORT PROBLEM

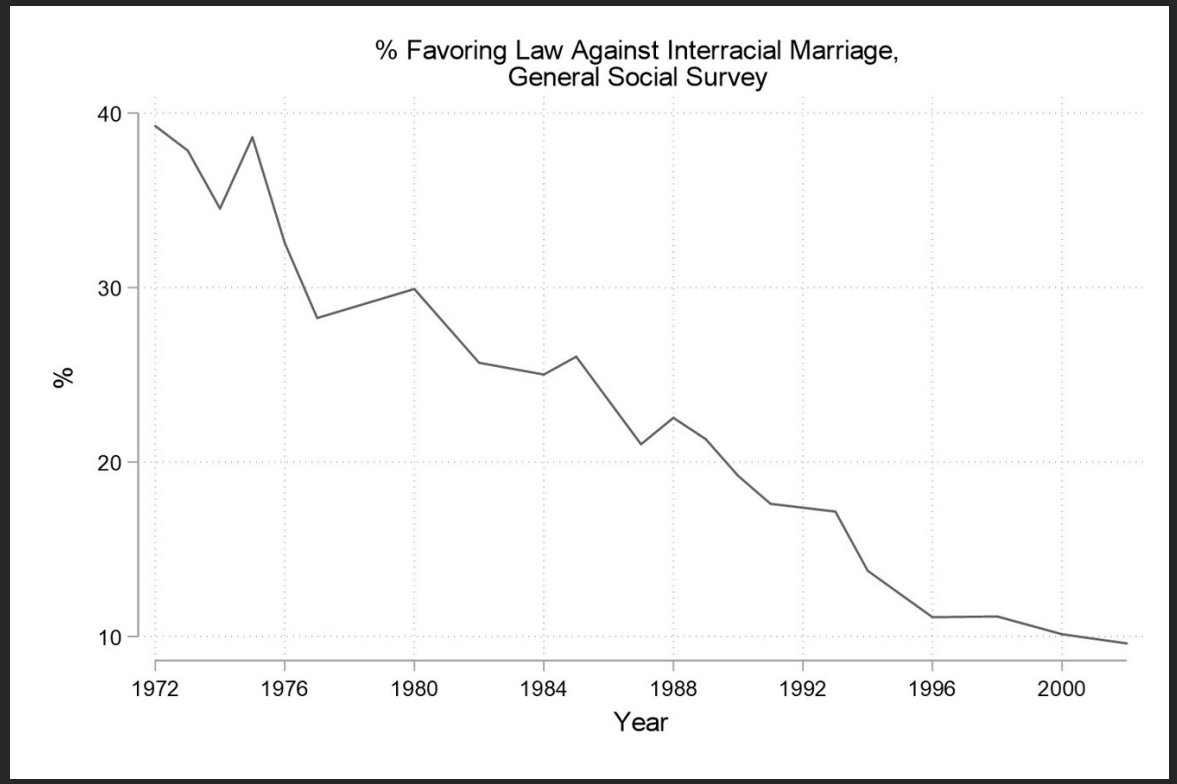
Age effects (developmental), ***period effects*** (current events), and ***cohort effects*** (shared early life experiences) are analytically separable but you only have two "real" variables to estimate three effects.

HAPC DECOMPOSITION

$$
\begin{aligned}
y_{ipc} &\sim \text{Normal}(\mu_{ipc}, \sigma) \\
\mu_{ipc} &= \beta_0 + \beta_1(\text{age}_{ipc}) + \beta_2(\text{age}^2_{ipc}) + \alpha_{\text{PER}[p]} + \gamma_{\text{COH}[c]} \\
\alpha &\sim \text{Normal}(0, \sigma_\alpha) \\
\gamma &\sim \text{Normal}(0, \sigma_\gamma)
\end{aligned}
$$

So σ^2_α tells you how much *periods* vary and σ^2_γ tells you how much *cohorts* vary so it's reasonable to ask about their relative importance.

INTERRACIAL MARRIAGE

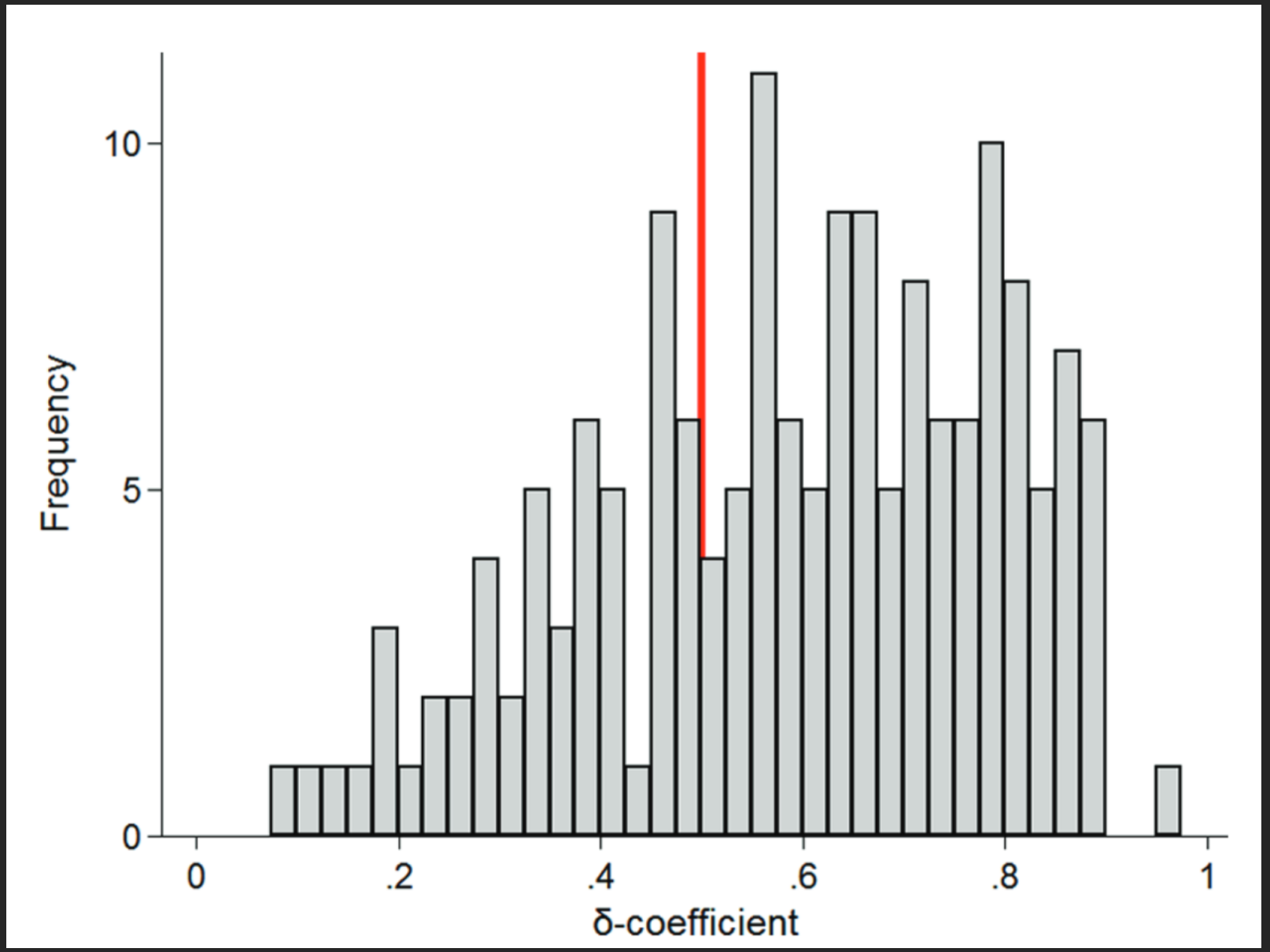


About 85% of this change is cohort replacement.

SAMPLE US GSS QUESTIONS (1972-PRESENT)

- “Please tell me whether or not you think it should be possible for a pregnant woman to obtain a legal abortion if the woman wants it for any reason?”
- “Tell me if you agree or disagree with this statement: Most men are better suited emotionally for politics than are most women.”
- “If some people in your community suggested that a book [someone] wrote which said Blacks are inferior should be taken out of your public library, would you favor removing this book, or not?”
- “Are we spending too much, too little, or about the right amount on improving and protecting the environment?”
- “What about sexual relations between two adults of the same sex--do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?”

ACROSS 164 VARIABLES



PANEL DATA VS. REPEATED CROSS-SECTIONS

- **PRO**: watch individual (non-)change
- **CON**: shorter time span (e.g., 2010-2014 vs. 1972-2021)

GSS PANEL DATA

three-wave panels

- - 2006-2008-2010
  - 2008-2010-2012
  - 2010-2012-2014
- 183 questions
- N ranges from about 900 to 1500 depending on item

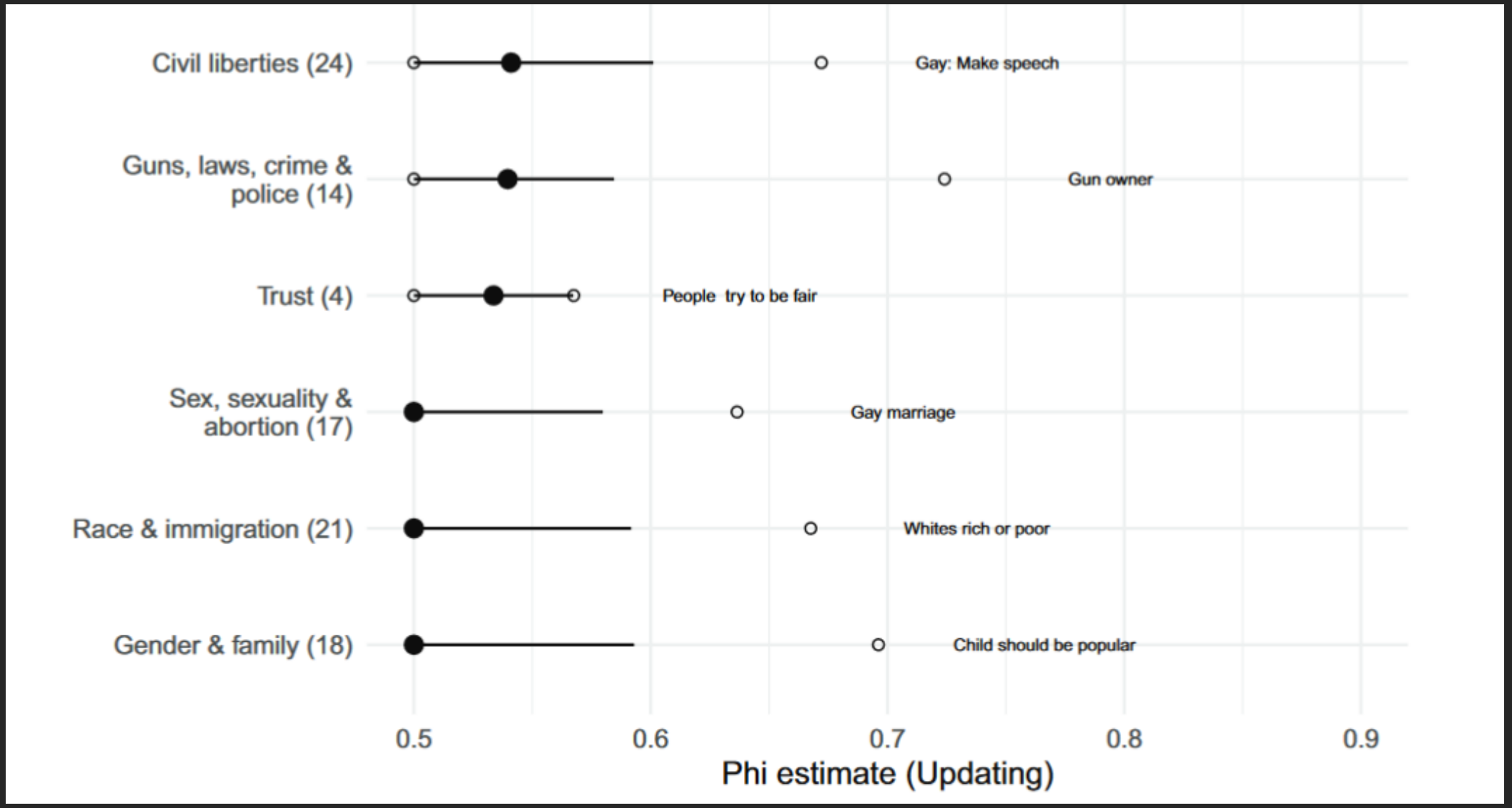
THE INTUITION

THE MODEL

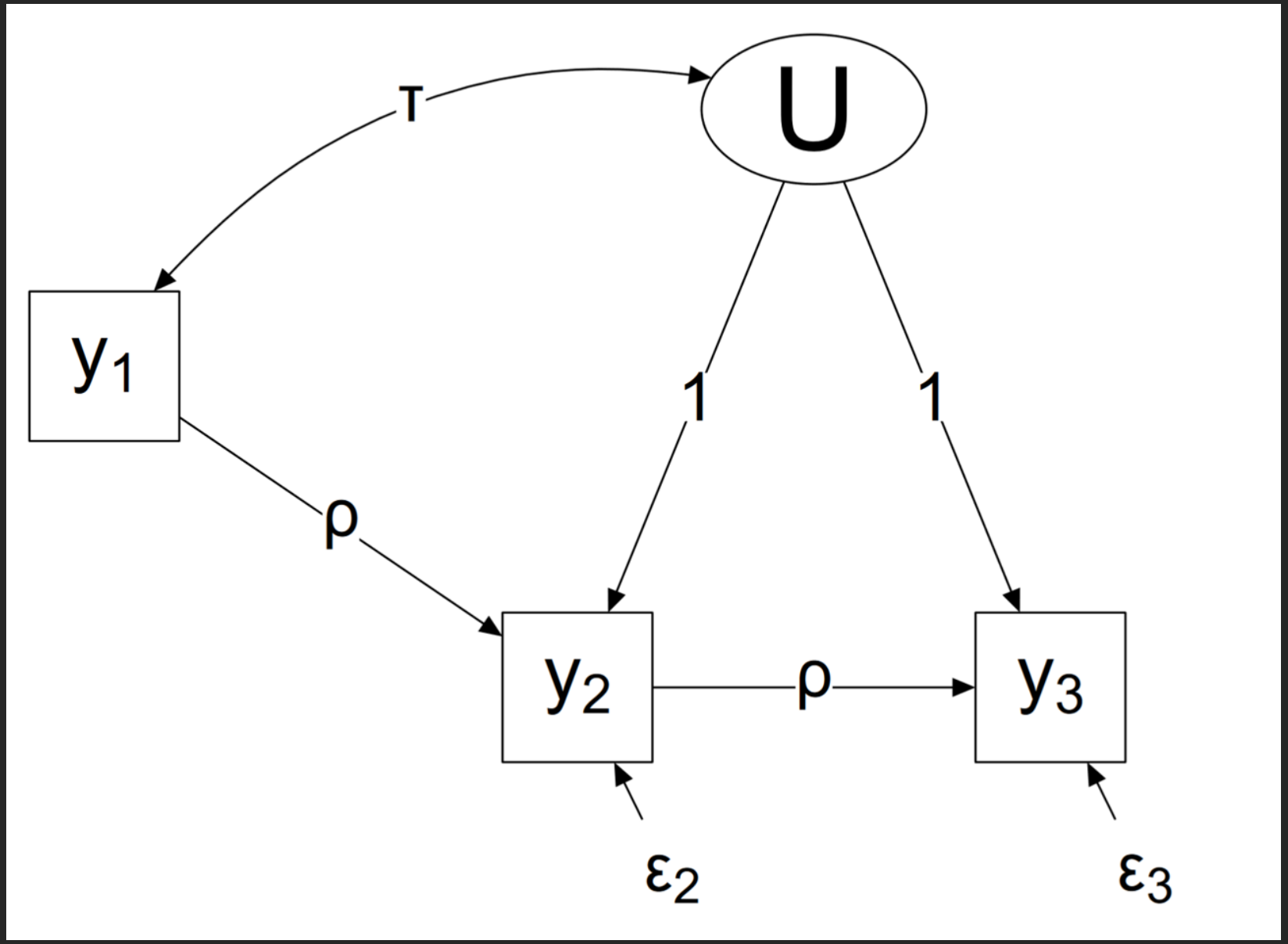
$$y_{i3} \sim \text{Normal}(\mu_i, \sigma)$$
$$\mu_i = \alpha + \phi\beta y_{i2} + (1 - \phi)\beta y_{i1}$$

- β is the extent to which wave 3 is predictable *at all* on the basis of previous responses
- ϕ is how "memoryless" (i.e., Markov-like) the process is; when it's closer to 1, that is evidence of **persistent change**; when it's closer to .5, that's evidence of **stability with error**

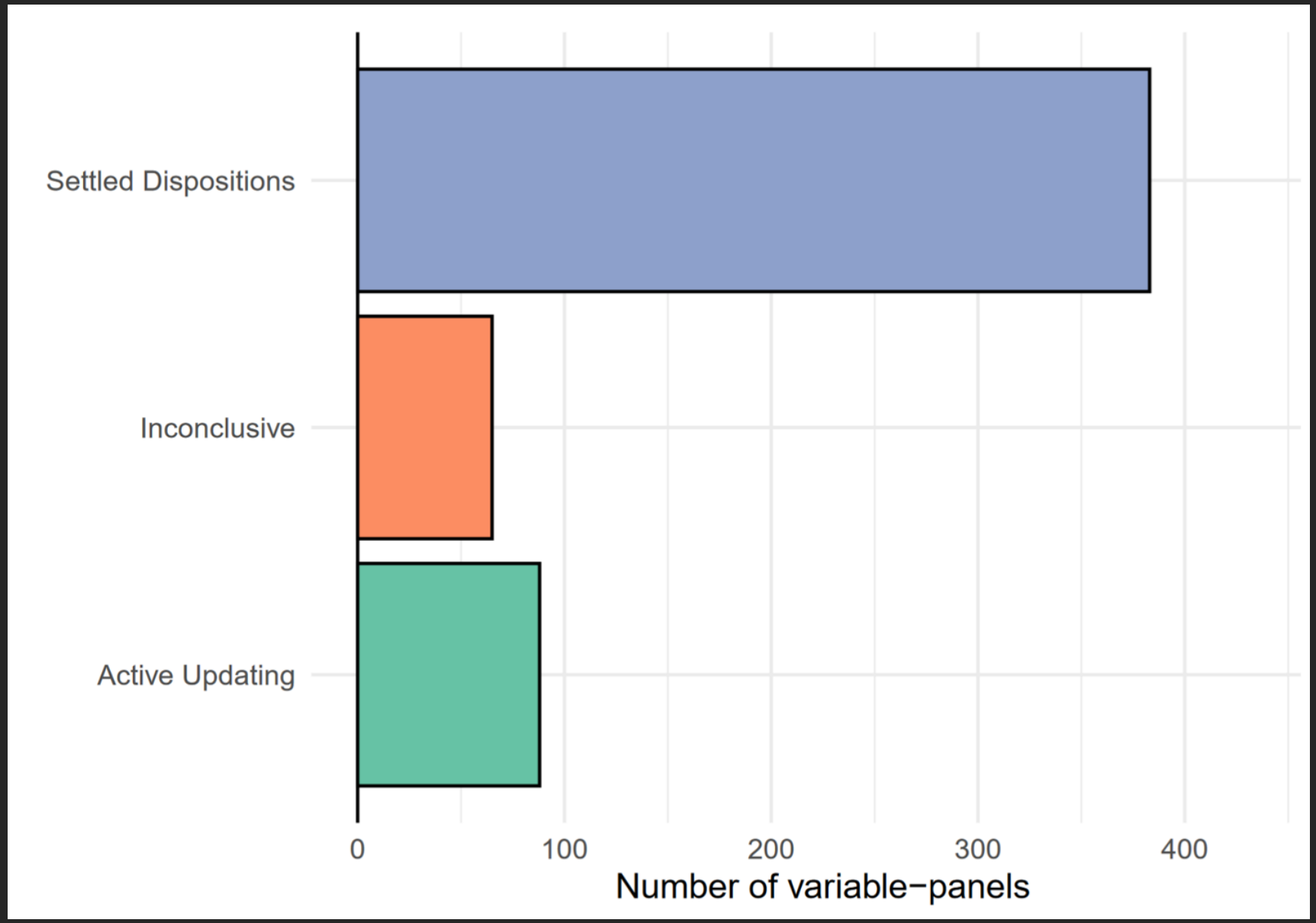
SELECTED ESTIMATES



SAME IDEA, DIFFERENT MODEL



RESULT: TOURNAMENT OF MODELS



EXTENDING THE MODEL TO LITERATURE

FICTION IN ENGLISH, 1880-1999

RECENT DEBATE

Change in Personal Culture over the Life Course

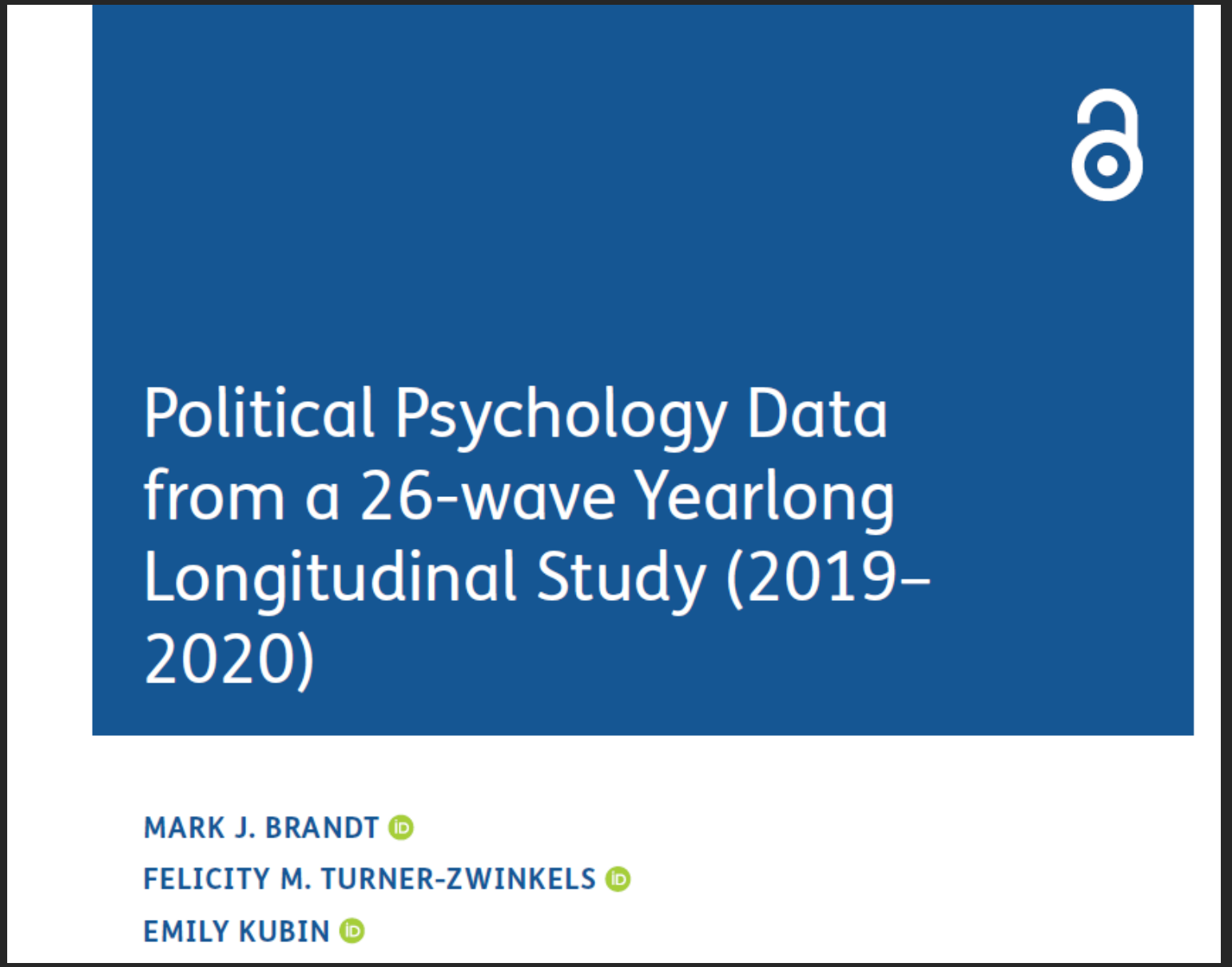
Philipp M. Lersch[a]

American Sociological Review
1–32


DOI:10.1177/00031224231156456
journals.sagepub.com/home/asr

NEW STUFF!

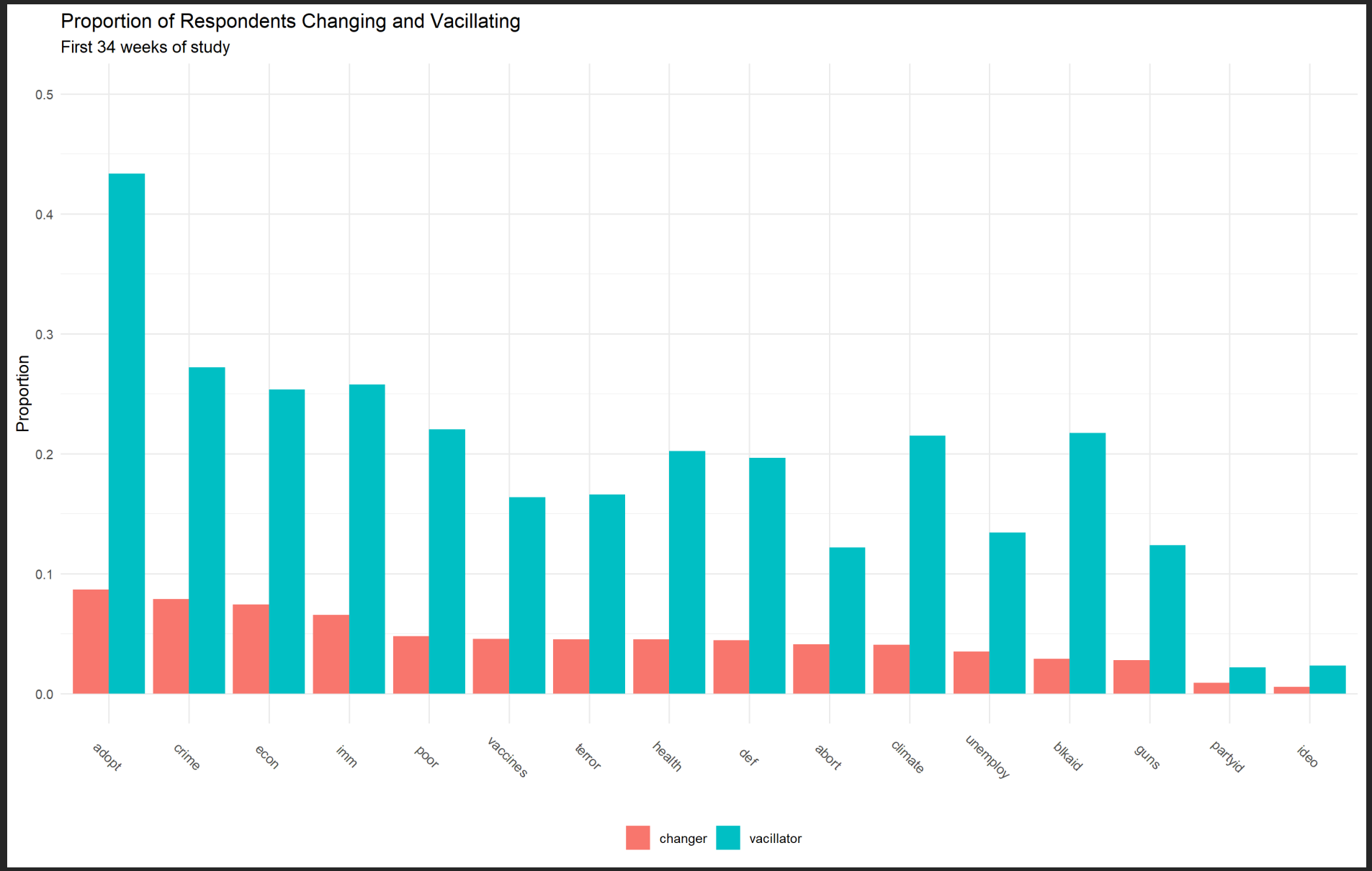
NEW (UNPUBLISHED) APPROACH: MORE WAVES!



DEFINING PERSISTENT CHANGE

- Up to 17 waves (pre-COVID only)
- “Real change” = crossing the midpoint of an (e.g.) agree-disagree scale and **not crossing back**
- “Vacillation” = crossing the midpoint more than once

RESULTS

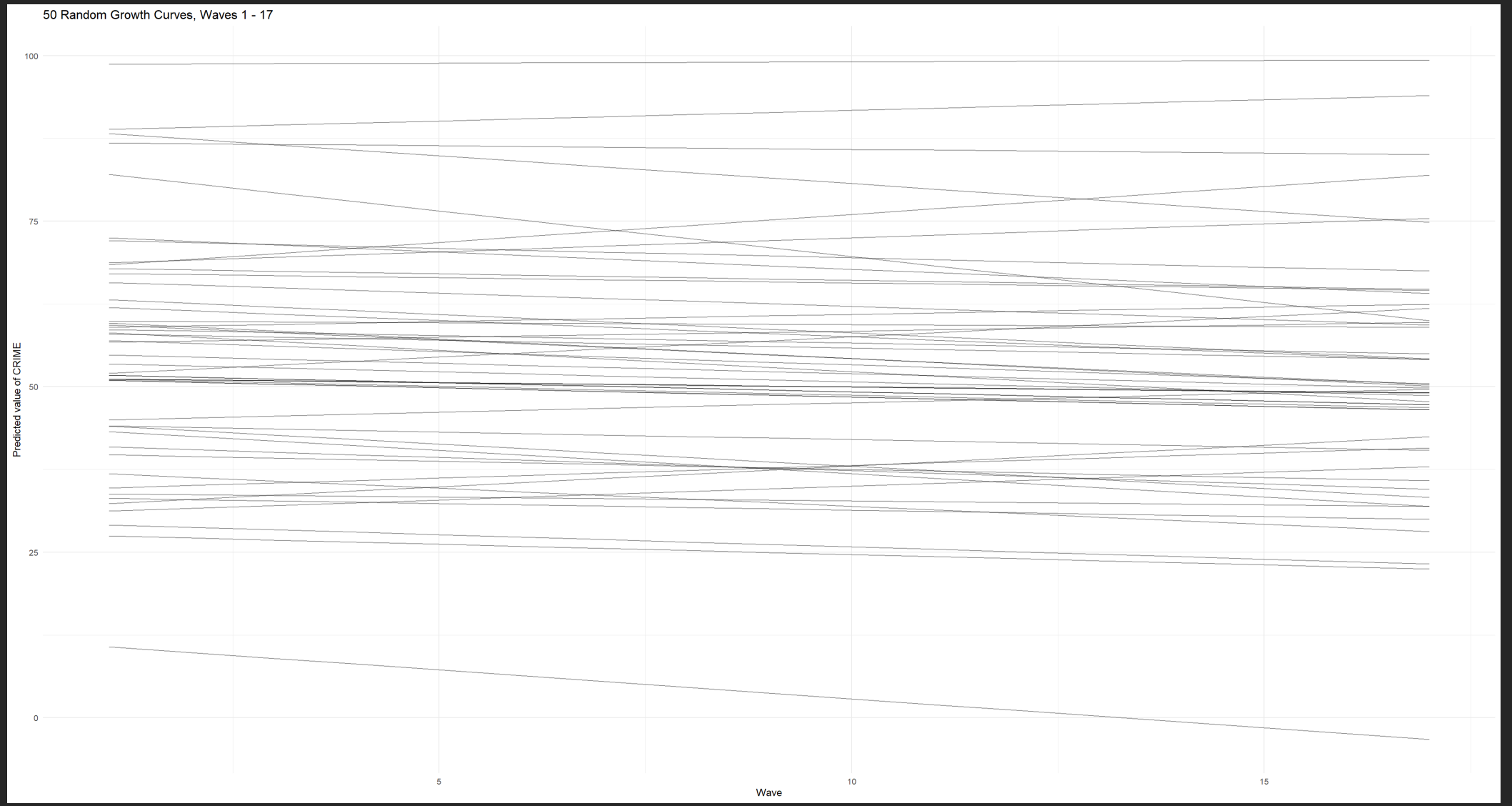

Proportion of Respondents Changing and Vacillating
First 34 weeks of study
Proportion
0.5
0.4
0.3
0.2
0.1
0.0
adopt
crime
econ
imm
poor
vaccines
terror
health
def
abort
climate
unemploy
blkaid
guns
partyid
ideo
changer
vacillator

GROWTH CURVE MODEL

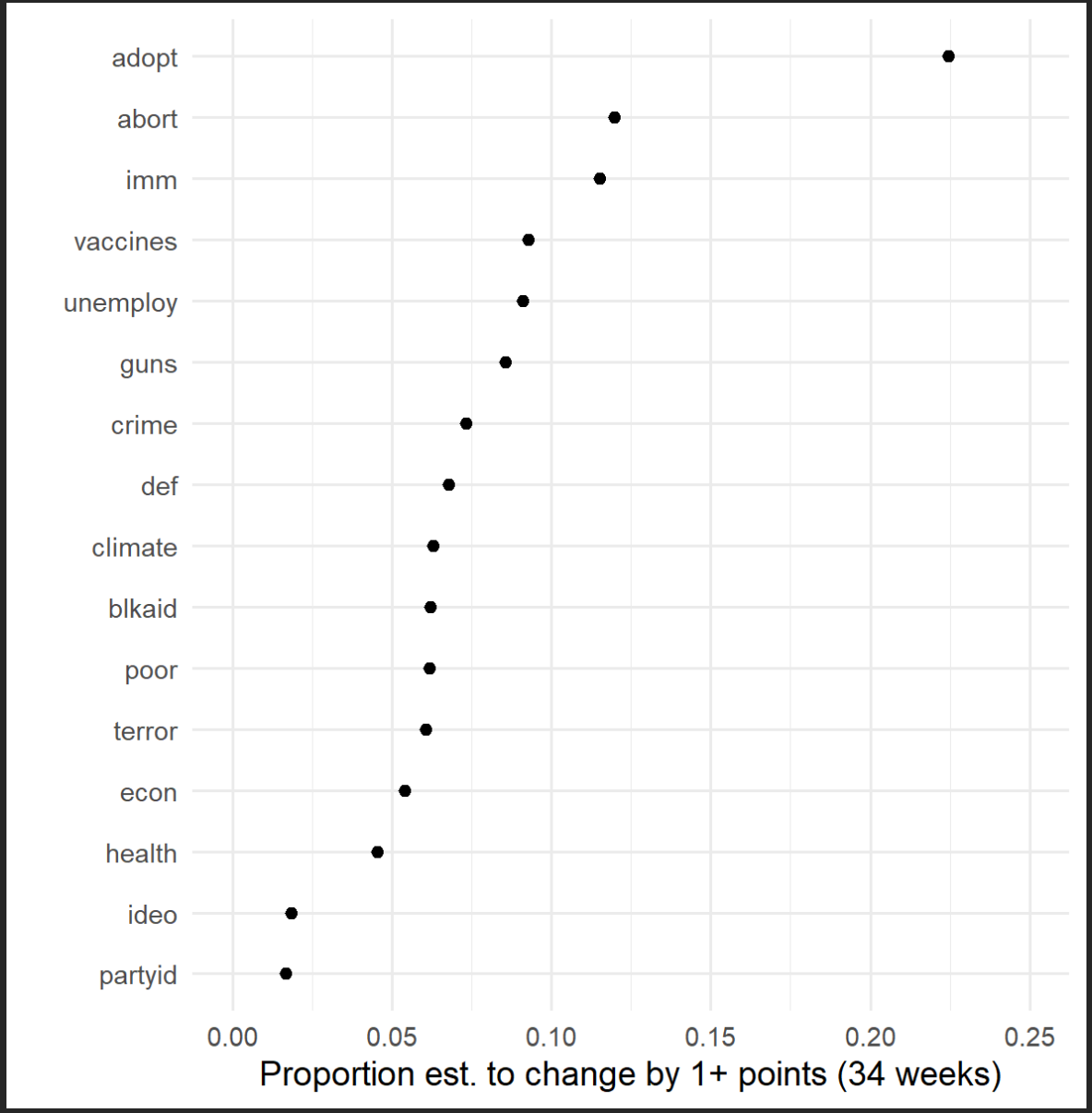
$$
\begin{aligned}
y_{it} &\sim \text{Normal}(\mu_{it}, \sigma) \\
\mu_{it} &= \beta_0 + \alpha_{0i} + (\beta_1 + \alpha_{1i}) wave_{it} \\
\alpha_0 &\sim \text{Normal}(0, \sigma_{\alpha_0}) \\
\alpha_1 &\sim \text{Normal}(0, \sigma_{\alpha_1})
\end{aligned}
$$

- Each person gets her own linear trajectory ($\beta_1 + \alpha_{1i}$)
- People whose estimated 34-week change is 1+ point on 7-point scale count (arbitrarily) as “changers”

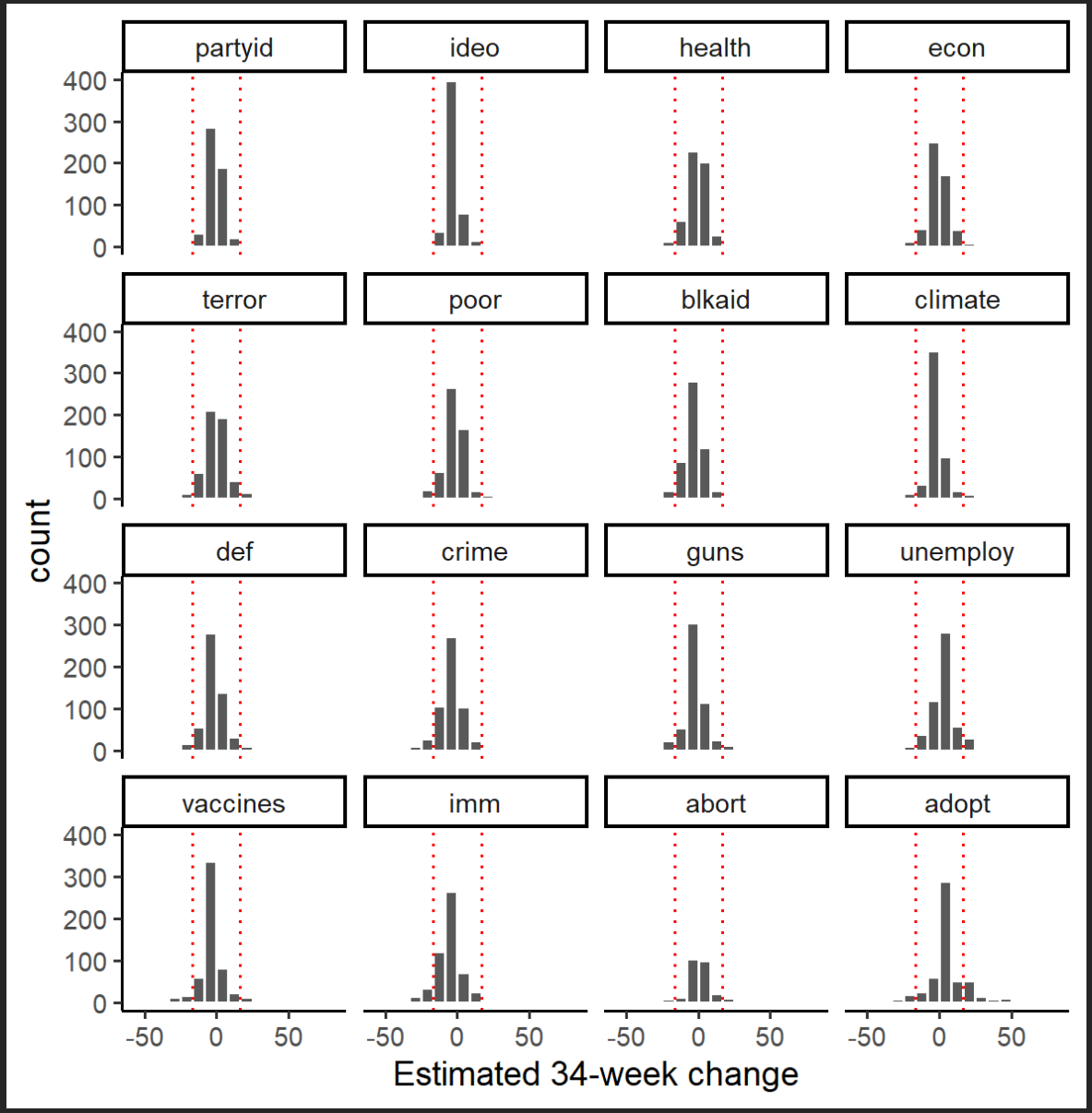
EXAMPLE GROWTH CURVE



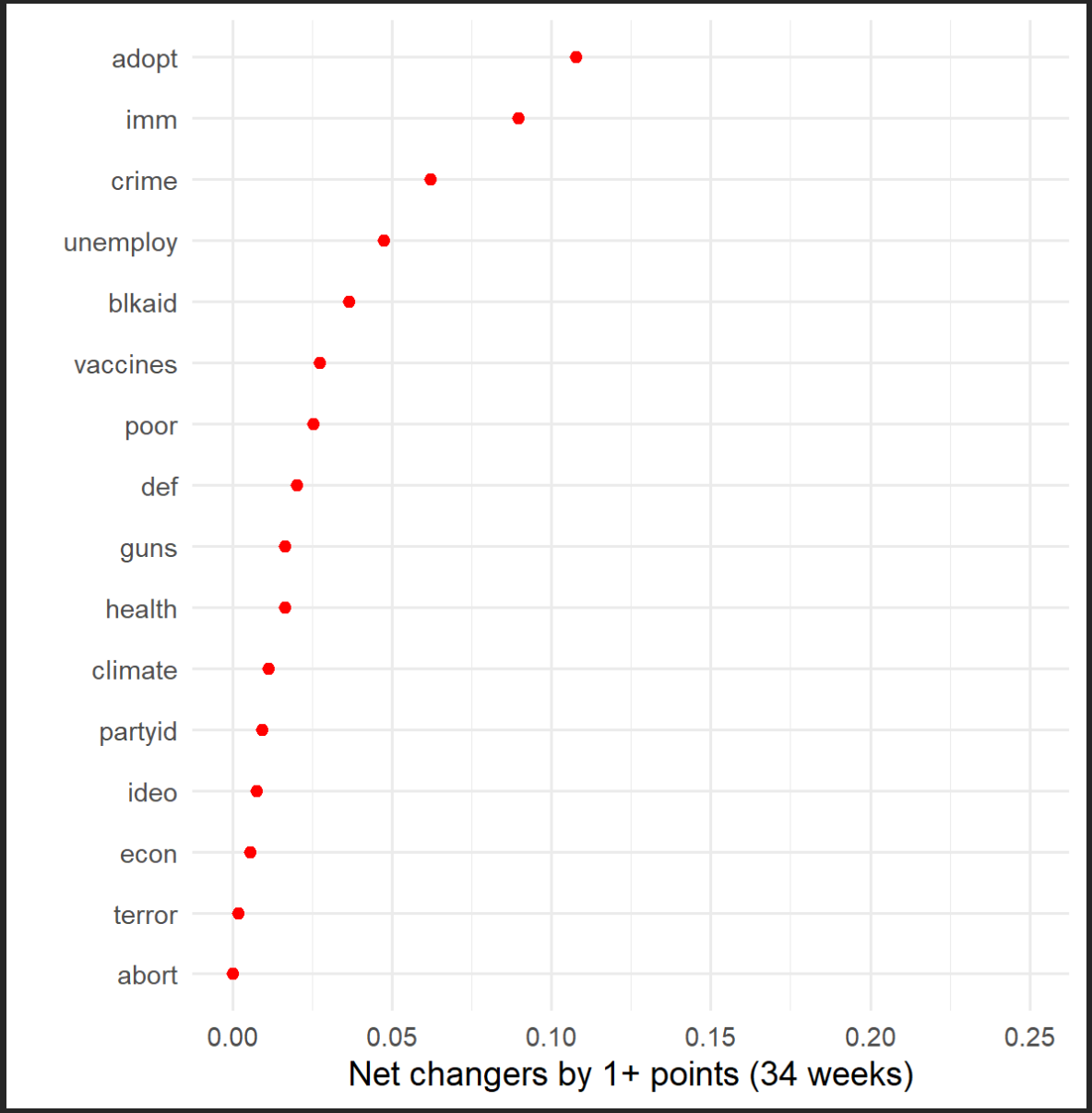
ESTIMATED CHANGE



SLOPE DISTRIBUTIONS



NET CHANGE


adopt
imm
crime
unemploy
blkaid
vaccines
poor
def
guns
health
climate
partyid
ideo
econ
terror
abort
0.00
0.05
0.10
0.15
0.20
0.25
Net changers by 1+ points (34 weeks)

THE BIG PICTURE

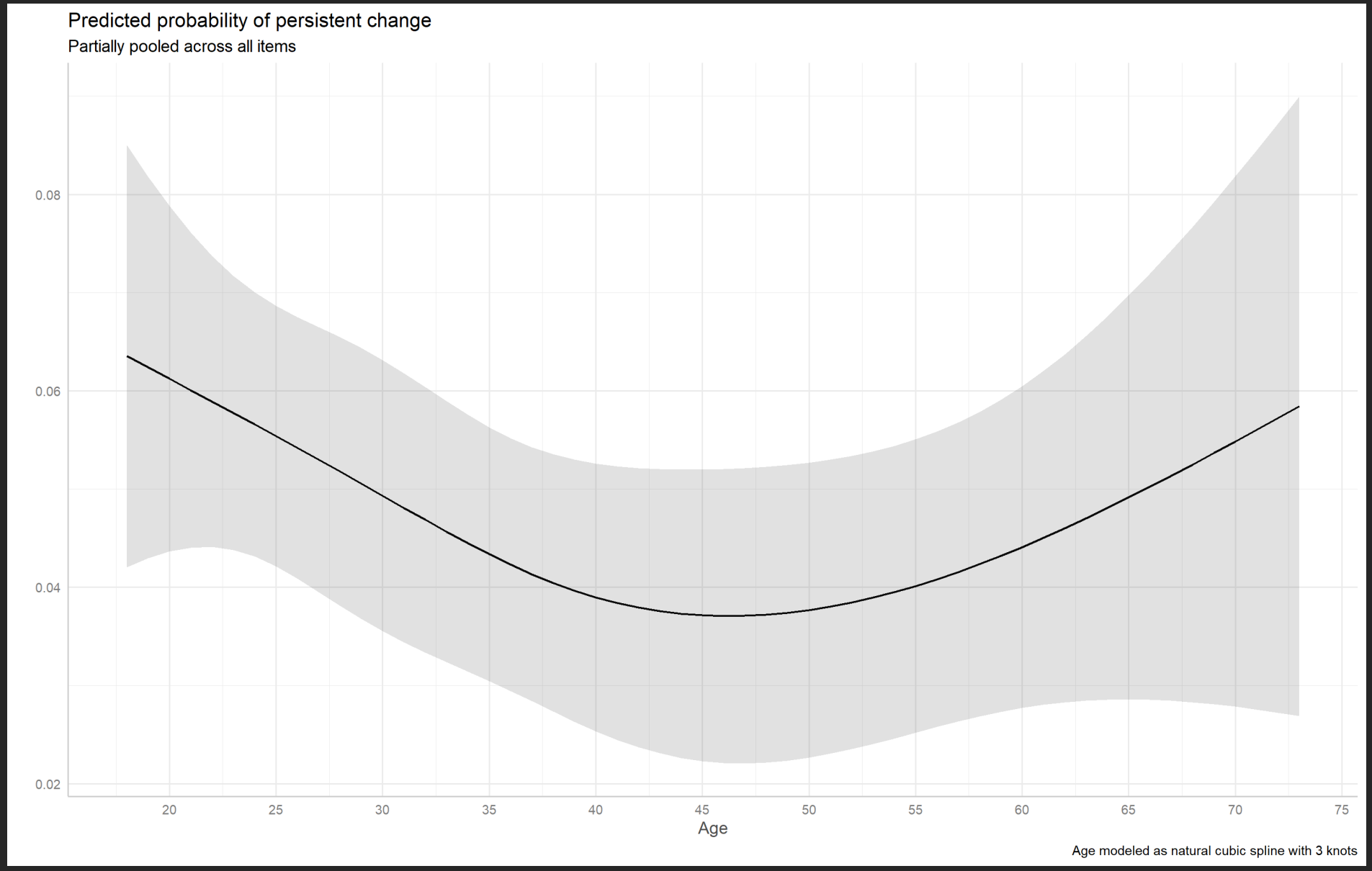
CONCLUSIONS

1. Most (not all!) contemporary cultural change comes via cohort replacement
2. Social salience may override (e.g., gay rights)
3. We need *quantification*, not just tournaments of models

OPEN QUESTIONS

1. Is this developmental?
2. How should we understand cohort effects?

DEVELOPMENTAL OR INSTITUTIONAL?



WHAT COHORTS DO

- Is plasticity *always* better?
- Cohorts as priors
- Older cohorts may be “regularizing”, which is needed for good out-of-sample learning

THANK YOU!

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