Life-Course Exposure to State Policy Liberalism and Cognitive Outcomes in Later Life

Emma Zang, Ph.D.

Department of Sociology, Yale University

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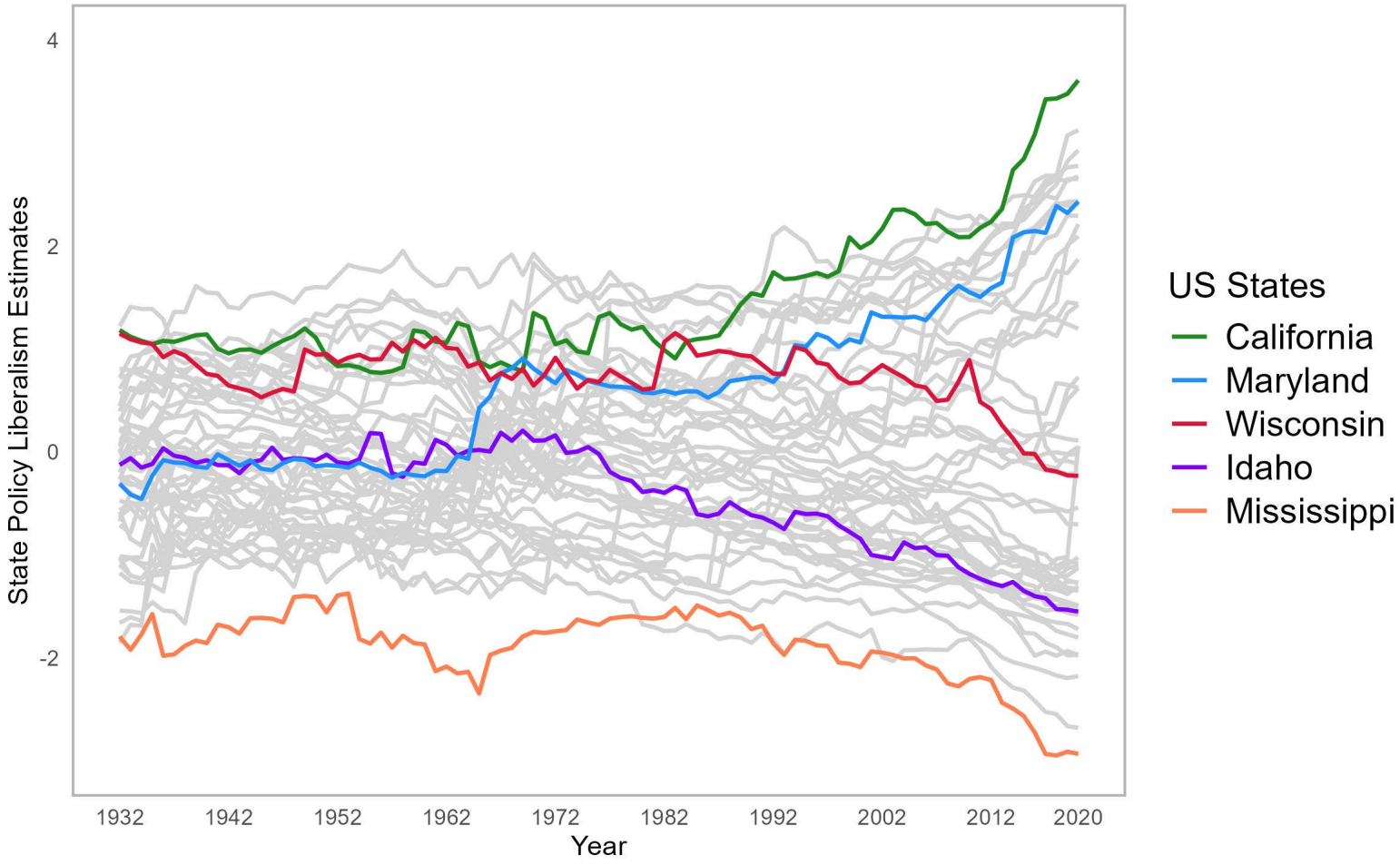
State policy liberalism in the US

- *"Liberalism involves greater government regulation and welfare provision to promote equality and protect collective goods, and less government effort to uphold traditional morality and social order at the expense of personal autonomy"* (Caughey and Warshaw 2016 P.901)
  - Policy domains: abortion, criminal justice, drug & alcohol, education, environment, gay rights, gun control, immigration, labor rights, racial discrimination, tax, welfare, and women's rights, etc.

Trends in state policy liberalism by US state, 1932-2020



Data from Caughey and Warshaw's (2024) state policy liberalism estimates. Author's calculation.

State policy contexts and population health

Original Scholarship

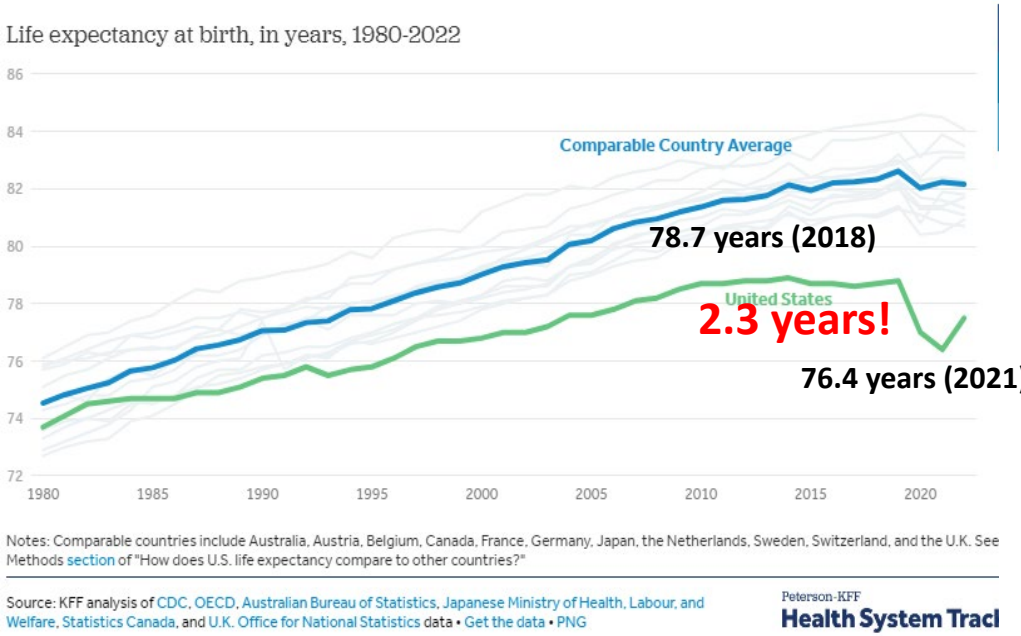
US State Policies, Politics, and Life Expectancy

JENNIFER KARAS MONTEZ,* JASON BECKFIELD,† JULENE KEMP COONEY,* JACOB M. GRUMBACH,‡ MARK D. HAYWARD,§ HUSEYIN ZEYD KOYTAK,* STEVEN H. WOOLF,‖ and ANNA ZAJACOVA#,**

*Syracuse University; †Harvard University; ‡University of Washington; §University of Texas at Austin; ‖Virginia Commonwealth University; #University of Western Ontario; **Coauthors listed alphabetically*

Policy Points:

- Changes in US state policies since the 1970s, particularly after 2010, have played an important role in the stagnation and recent decline in US life expectancy.
- Some US state policies appear to be key levers for improving life expectancy, such as policies on tobacco, labor, immigration, civil rights, and the environment.
- US life expectancy is estimated to be 2.8 years longer among women and 2.1 years longer among men if all US states enjoyed the health advantages of states with more liberal policies, which would put US life expectancy on par with other high-income countries.



"US life expectancy is estimated to be 2.8 years longer among women and 2.1 years longer among men if all US states enjoyed the health advantages of states with more liberal policies"

Montez et al. (2020). *The Milbank Quarterly*, *98*(3), 668-699.

Existing gaps in the literature

- State policy literature: Limited knowledge on lifetime state policy exposure based on where people have lived.
- Life course literature: The missing piece of state policy contexts
- Understanding the impact of state policy across a person's lifetime and across different ages could give us a much clearer picture

Research objectives

A full life-course approach to understanding how state policy shapes later-life cognitive health

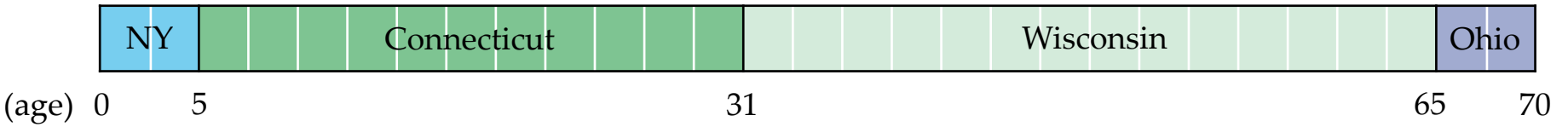
(1) Identify full residential trajectories from ages 0 to 50

(2) Characterize life-course exposure patterns to state policy contexts

(3) Examine how state policy exposure trajectories shape cognitive outcomes in adults 50+

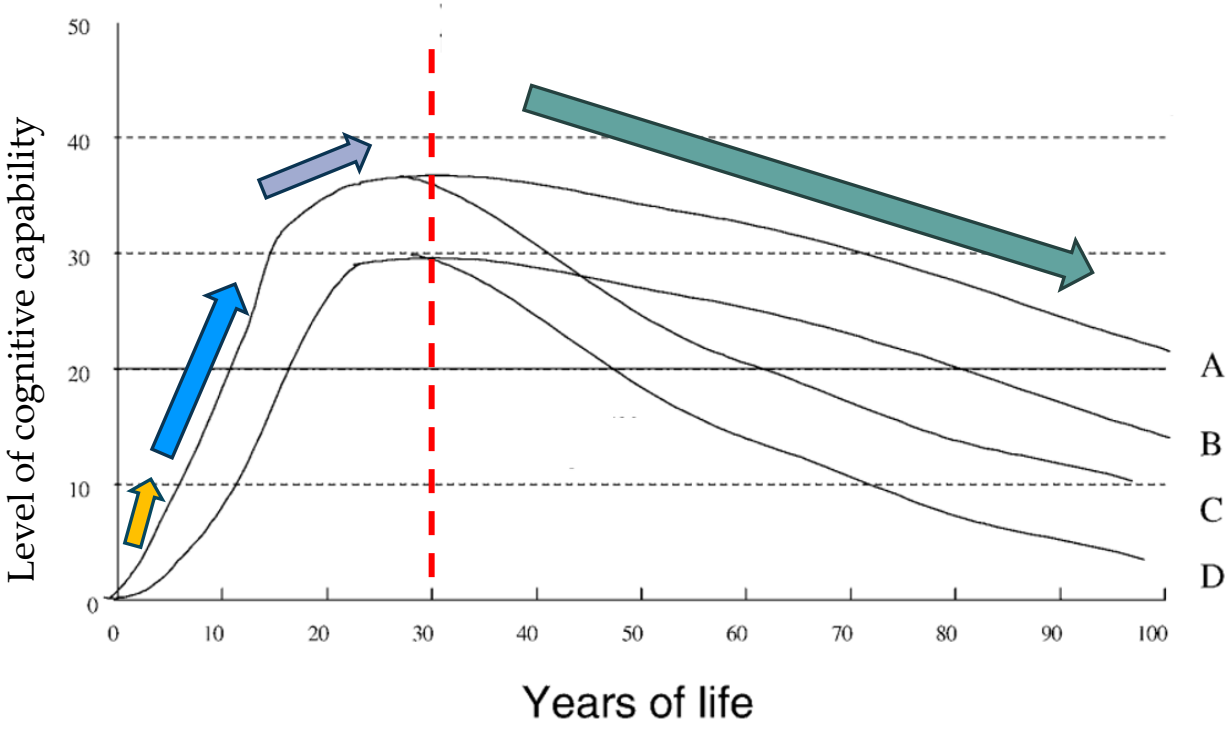
A full life-course approach

Person A's residential history



- Duration matters: *How long?*
  - The cumulative exposure model
  - Weighted duration of New York + Connecticut + Wisconsin + Ohio
- Timing matters: *When?*
  - The critical period theory
  - Early childhood in New York
- Sequence matters: *What order?*
  - **Theory remains ambiguous**
  - The order of New York → Connecticut → Wisconsin → Ohio

Cognitive function follows a developmental life-course trajectory

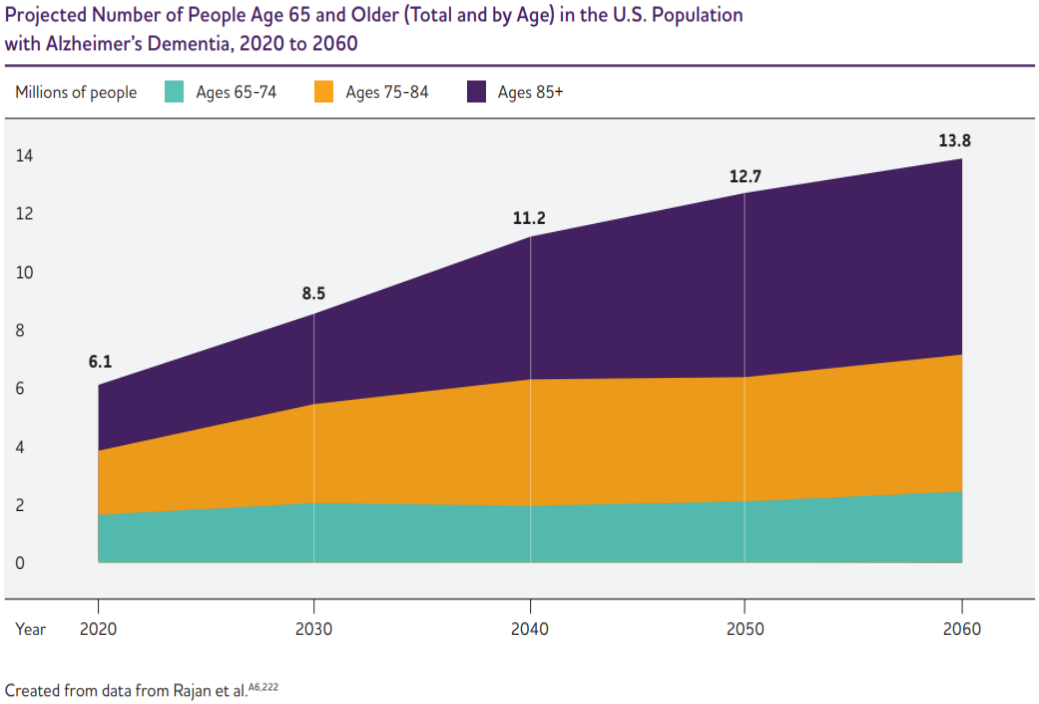


- Early childhood (ages 0-5): most rapid growth
- Middle childhood (ages 6-12) and adolescence (ages 13-17): rapid growth
- Emerging adulthood (ages 18-30): more gentle increase; peak at maturity
- Adulthood (ages 31-50): gradual decline

Kuh, D. (2007). A life course approach to healthy aging, frailty, and capability. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *62*(7), 717-721.

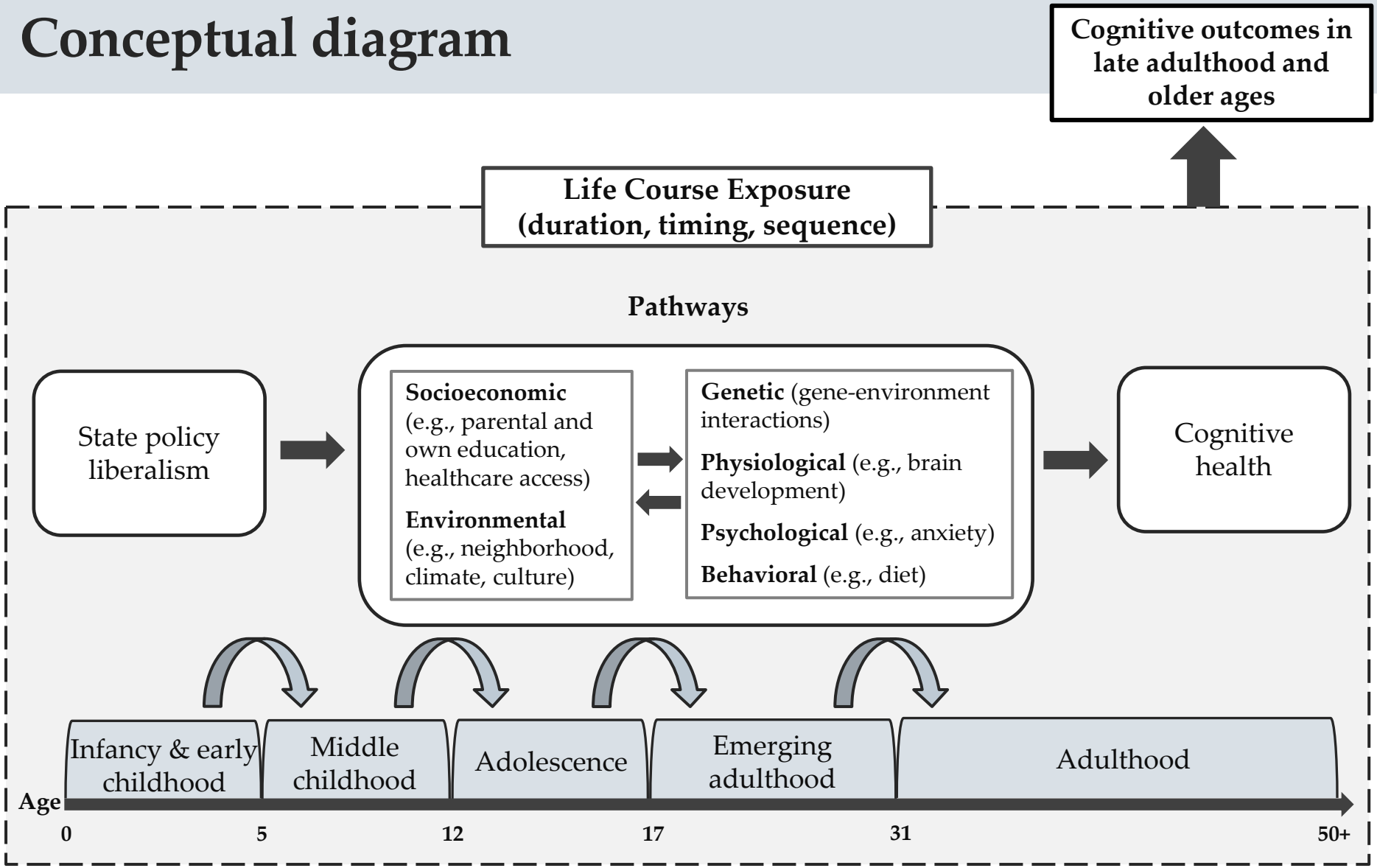
Dementia is a major public health concern

- Dementia is a major cause of mortality among older Americans
- In 2022, 6.7 million Americans 65+ live with dementia, costing $345 billion annually (Alzheimer's Association, 2023)



Figures are from *2023 Alzheimer's disease facts and figures*

Conceptual diagram



Data

- **Health and Retirement Study 1998-2020**

- **The Dynamics of State Policy Liberalism, 1936-2014**
  - State-by-year policy liberalism on 148 policies (Caughey & Warshaw, 2016)

Measures

- **Cognitive outcomes:** cognitive functioning (continuous; 0-27, higher indicate better) and cognitive impairment (binary; yes/no)

- **Characteristics of exposure trajectory**
  - **Cumulative exposure (duration)**: mean state policy liberalism exposure
  - **Exposure by developmental stage (timing)**: mean state policy liberalism exposure during early childhood (0-5), middle childhood (6-12), adolescence (13-17), emerging adulthood (18-30), and adulthood (31-50)
  - **Exposure trend (sequence)**: exposure changes relative to the prior developmental stage

An example for the data format

Individual ID	Year	Age	State	State Policy Liberalism
1	1945	0	Connecticut	0.607
1	1946	1	Connecticut	0.685
1	1947	2	Connecticut	0.905
1	1948	3	Connecticut	0.872
		⋮		
1	1992	47	Connecticut	1.392
1	1993	48	Wisconsin	0.662
1	1994	49	Wisconsin	0.999
1	1995	50	Wisconsin	0.979

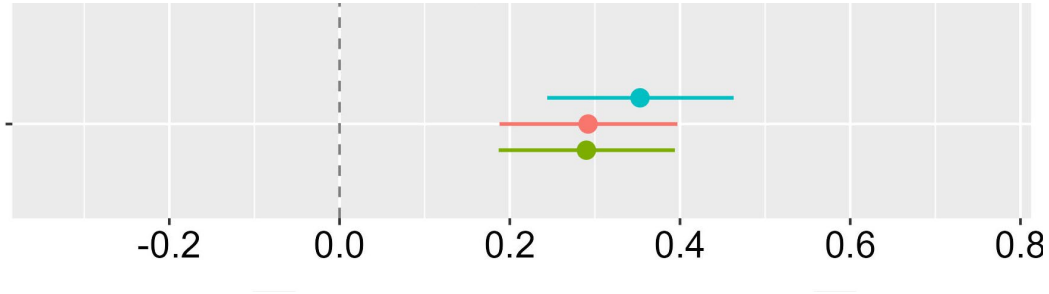
Full residential trajectories of state policy liberalism

Analytical Strategies

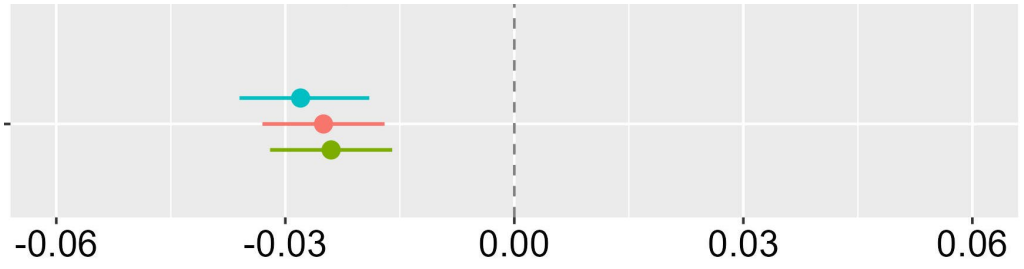
- **Linear random-effects models with wave-, age-, and state-fixed effects**
  - Control for number of waves respondents participated
  - Standard errors clustered at the household level
- **Covariates:**
  - **Demographic controls**: sex, and race/ethnicity
  - **Childhood SES and health controls**: self-rated financial situation, received any help from relatives, moved due to financial difficulties, parental highest education, father's occupation, self-rated health, presence of chronic disease, disability, depression, at least one learning problem, parental divorce, parental death, household size, and presence of both parents in the household
  - **Additional controls**: number of interstate migrations and number of children ever had

Results: Cumulative exposure (duration)

Cognitive functioning (with 95% CI)



Risk of cognitive impairment (with 95% CI)

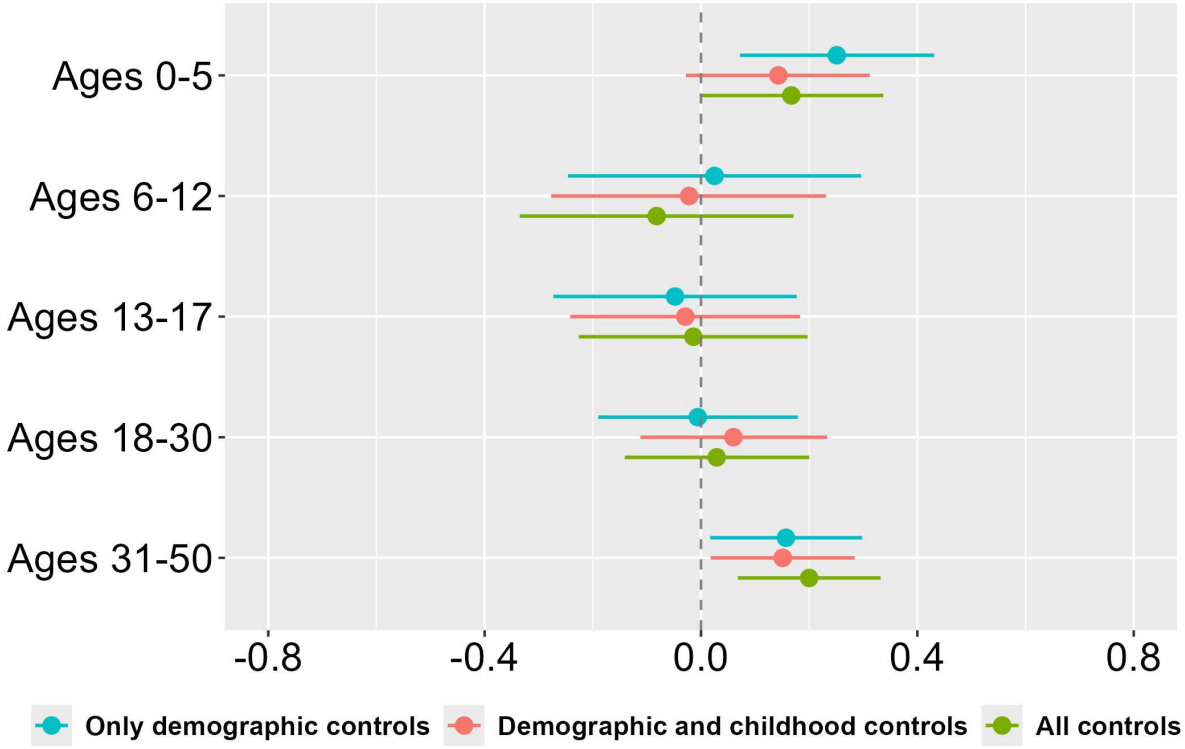


Only demographic controls | Demographic and childhood controls | All controls

- A 1-unit increase in the policy liberalism score (ages 0-50) is linked to a 0.29-unit (1.7%) improvement in cognitive functioning and a 2.4% reduction in cognitive impairment risk
- What does 1.7% improvement mean?
  - Medicare Part D implementation linked to a 1.6% increase in cognitive function (Pak and Kim, 2017)

Results: Exposure by developmental stage (timing)

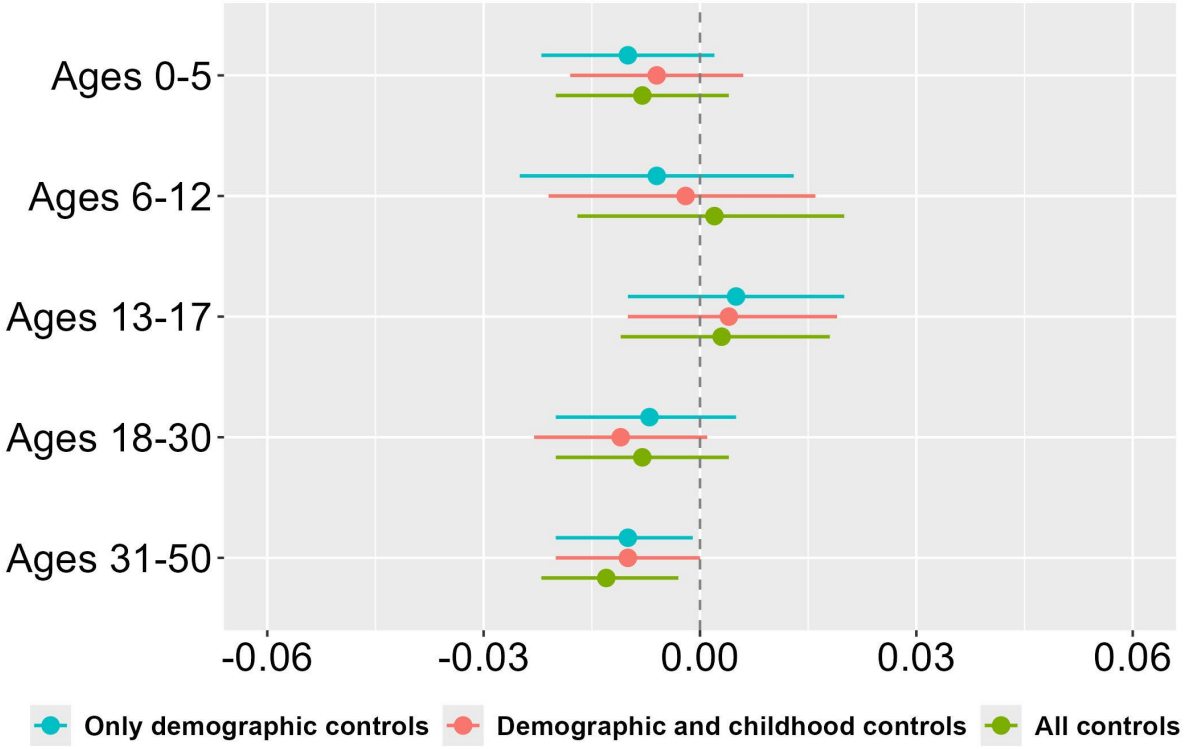
Cognitive functioning (with 95% CI)



- Liberal policy exposure in early childhood (0-5) and adulthood (31-50) linked to better cognitive function at 50+
  - Early childhood: 0.17 units
  - Adulthood: 0.20 units

Results: Exposure by developmental stage (timing)

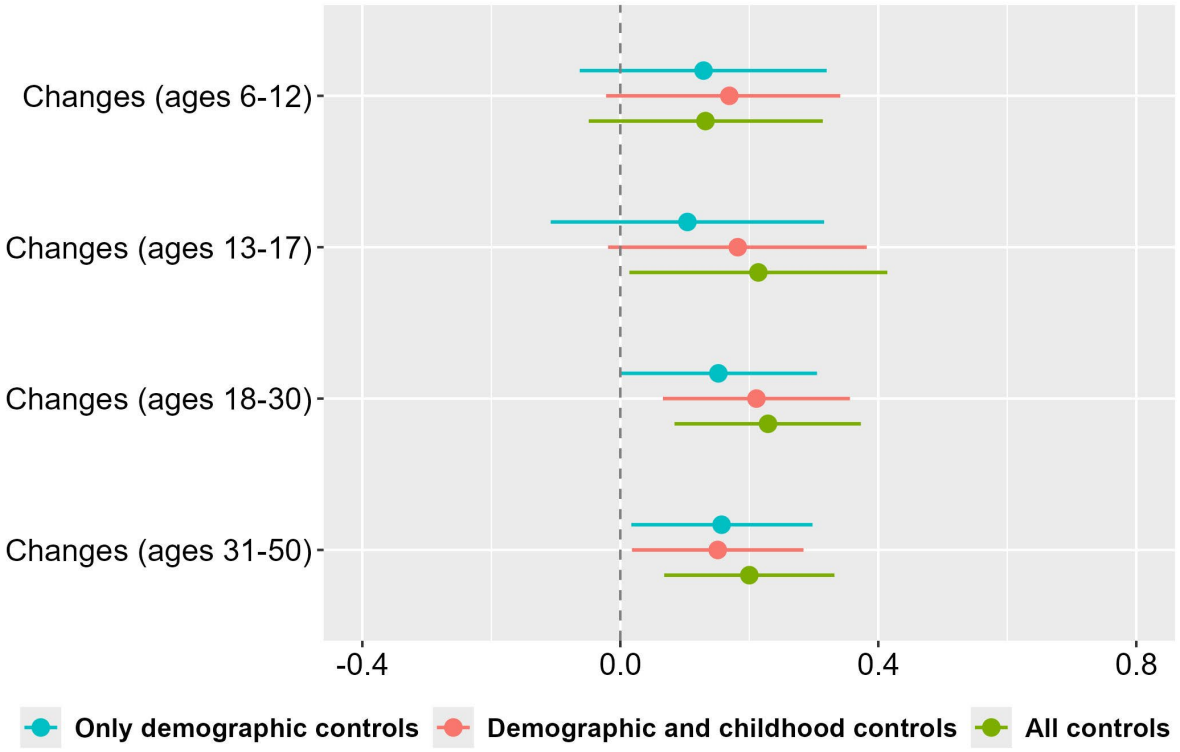
Risk of cognitive impairment (with 95% CI)



- A 1-unit increase in policy liberalism score in adulthood (31-50) is linked to a 1.3 percentage point lower probability of cognitive impairment.

Results: Exposure trend (sequence)

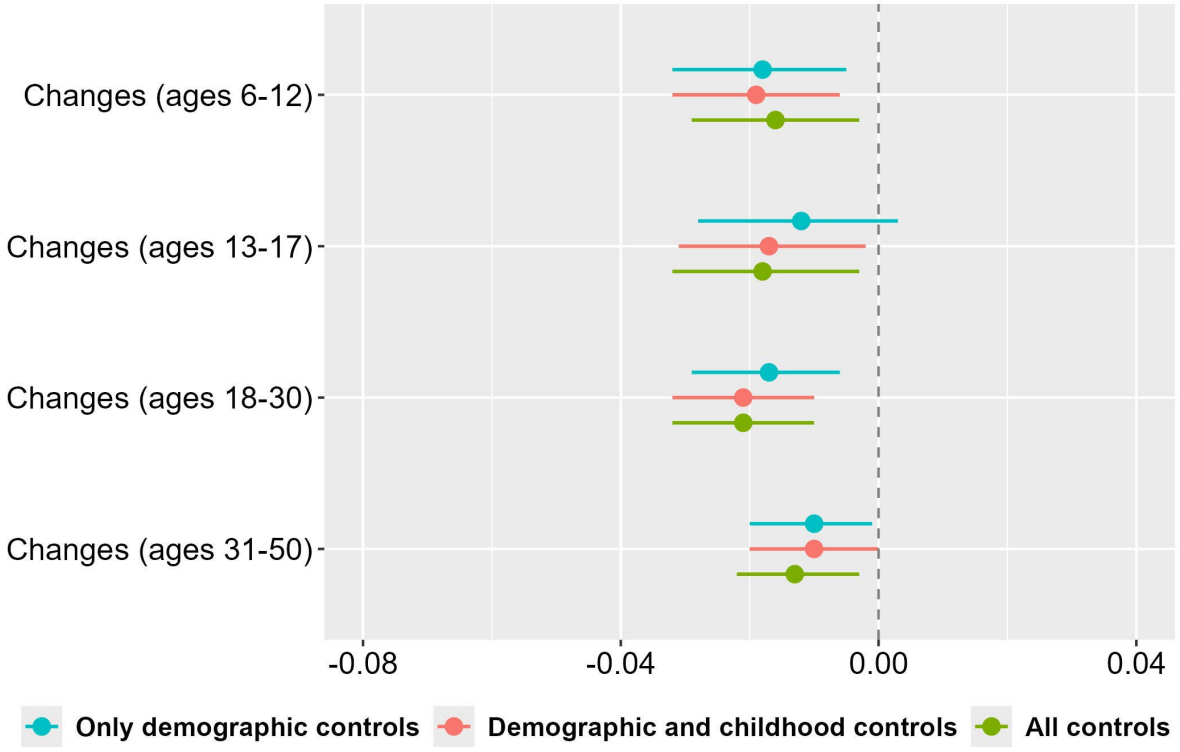
Cognitive functioning (with 95% CI)



- Exposure to more liberal policies relative to previous developmental stage is linked to better cognitive functioning
  - Adolescence: 0.21 units
  - Emerging adulthood: 0.23 units
  - Adulthood: 0.20 units

Results: Exposure trend (sequence)

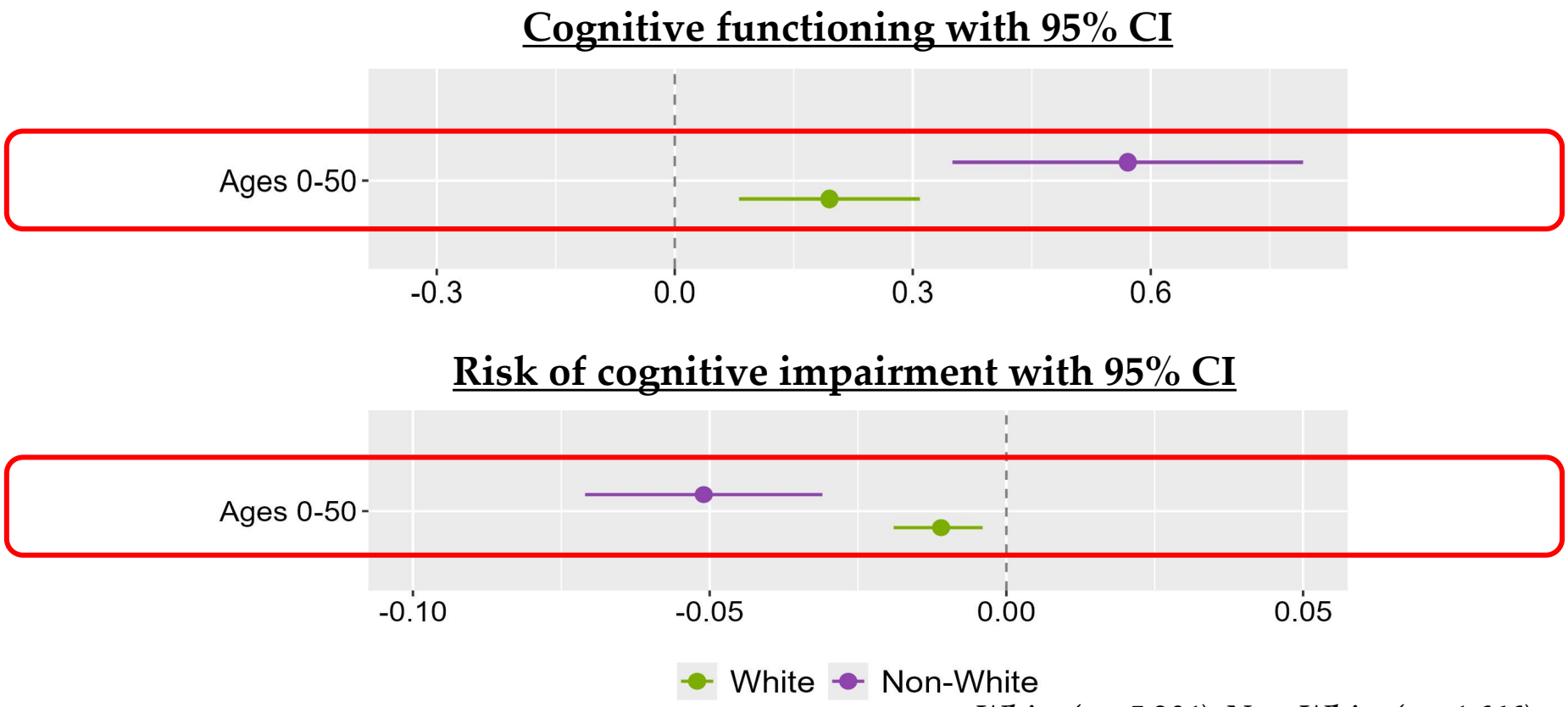
Risk of cognitive impairment (with 95% CI)



- Exposure to more liberal policies relative to previous developmental stage is linked to lower probability of cognitive impairment
  - Middle childhood: 1.6%
  - Adolescence: 1.8%
  - Emerging adulthood: 2.1%
  - Adulthood: 1.3%

Subgroup analysis by race/ethnicity

Cumulative exposure (duration)

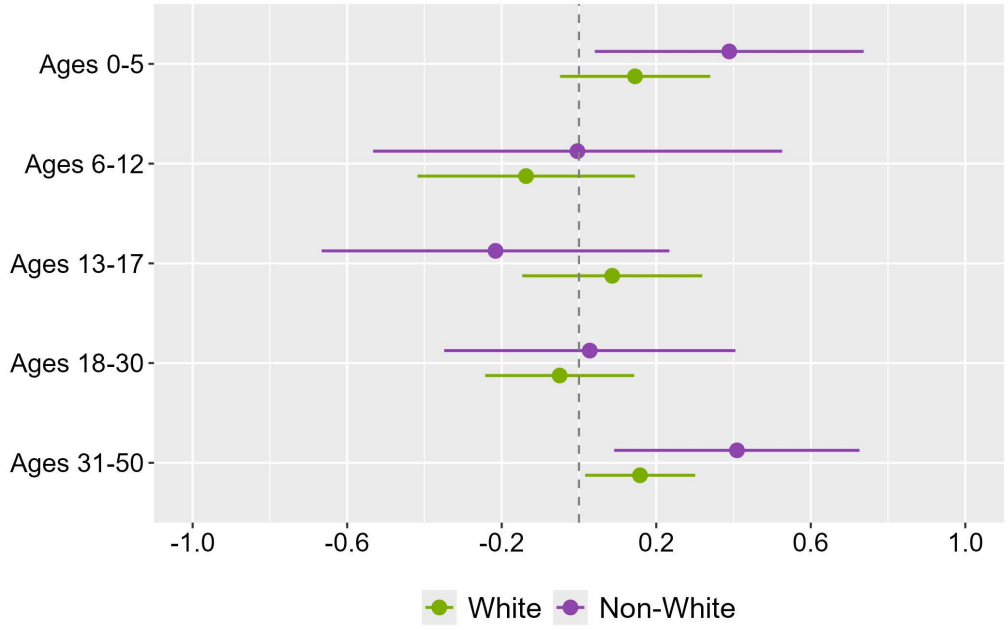


White (n = 5,291); Non-White (n = 1,646)

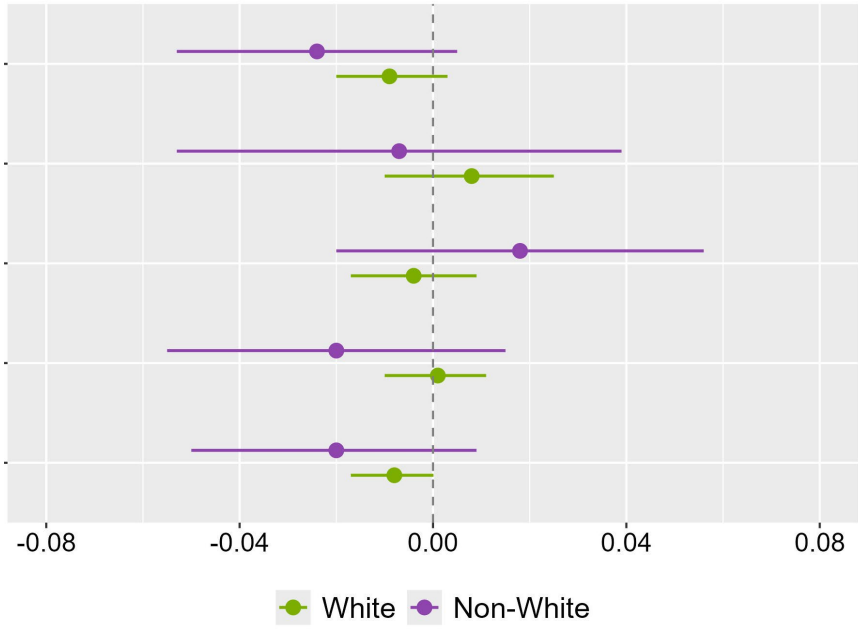
Subgroup analysis by race/ethnicity

Exposure by developmental stage (timing)

Cognitive functioning with 95% CI



Risk of cognitive impairment with 95% CI



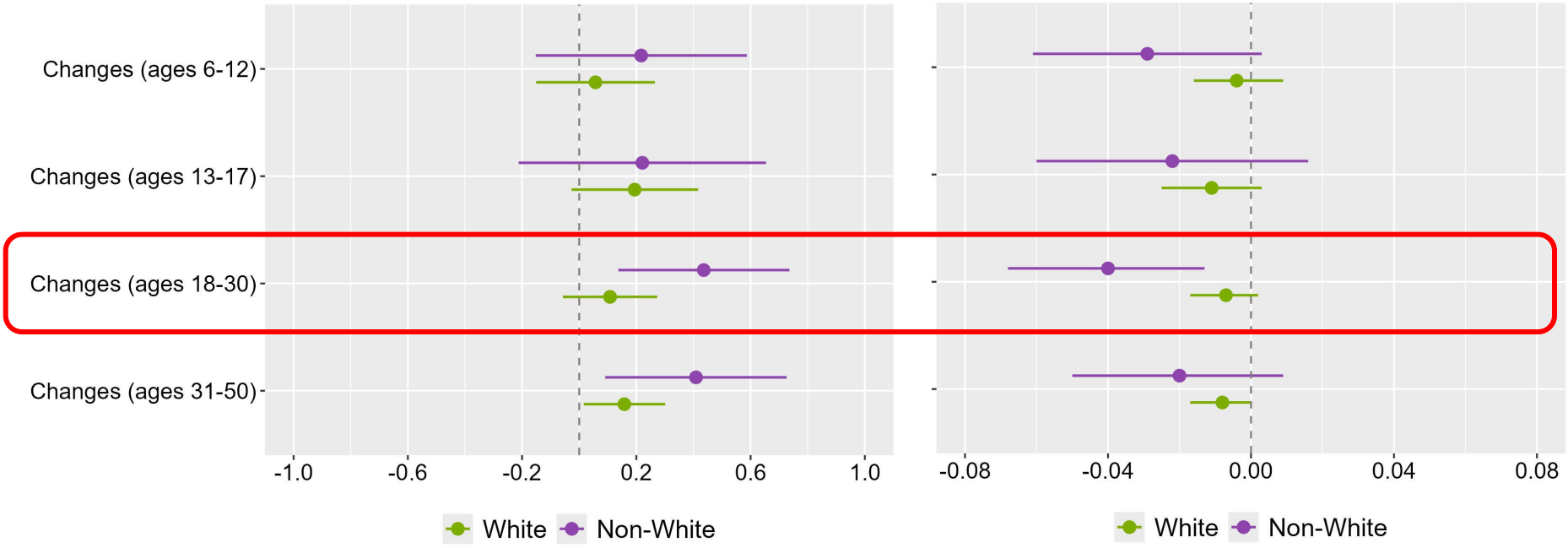
White (n = 5,291); Non-White (n = 1,646)

Subgroup analysis by race/ethnicity

Exposure trend (sequence)

Cognitive functioning with 95% CI

Risk of cognitive impairment with 95% CI



White (n = 5,291); Non-White (n = 1,646)

Conclusion

- Using a full life-course approach with residential addresses, we examined how exposure to state policy liberalism from ages 0 to 50 associates with later-life cognitive health
- We find
  - **Duration** matters: Longer cumulative exposure to liberal policies is linked to better cognitive health in later life
  - **Timing** matters: Particularly salient during early childhood and adulthood
  - **Sequence** matters: Increasing exposure to liberal policies is associated with better cognitive health

Potential Policy Implications

- The association underscores potential areas for policy intervention to support aging populations.
  - Early childhood: quality early education, nutrition assistance, parental support, healthcare access, safe housing, and affordable childcare to foster a healthy developmental environment.
  - Adulthood: Policies promoting mental well-being, work-life balance, and financial security, as well as stress-reduction initiatives; programs that provide continuous educational and cognitive engagement opportunities

Acknowledgement

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Thank you!

Emma Zang, Ph.D.

Department of Sociology
Department of Biostatistics (Secondary)
The Yale Jackson School of Global Affairs (Secondary)
Yale University, USA
emma.zang@yale.edu