

EARLY LIFE RESERVES, MIDLIFE PATHWAYS,
AND LATER LIFE DEMENTIA RISK

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OUTLINE

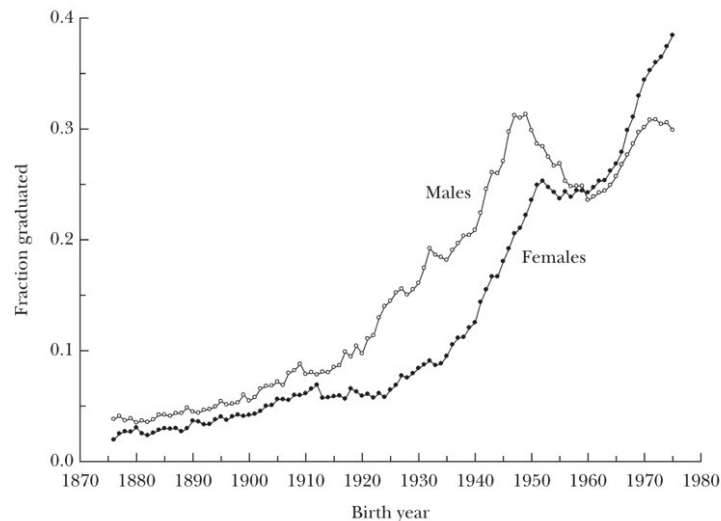
- Literature on early life determinants and health in later life is well developed, but this is not true for dementia, especially in the biomedical sciences where most of the focus is on education.
- We need to better understand what builds early life cognitive reserve.
- Social scientists have theoretical, empirical, and data resources that can help unpack these influences.

EARLY LIFE INFLUENCES ON DEMENTIA RISK

- Existing research mostly focused on educational attainment.
- But social factors, particularly that temporally precede educational attainment, are less well understood.

Figure 1

College Graduation Rates (by 35 years) for Men and Women: Cohorts Born from 1876 to 1975



EARLY LIFE MATTERS

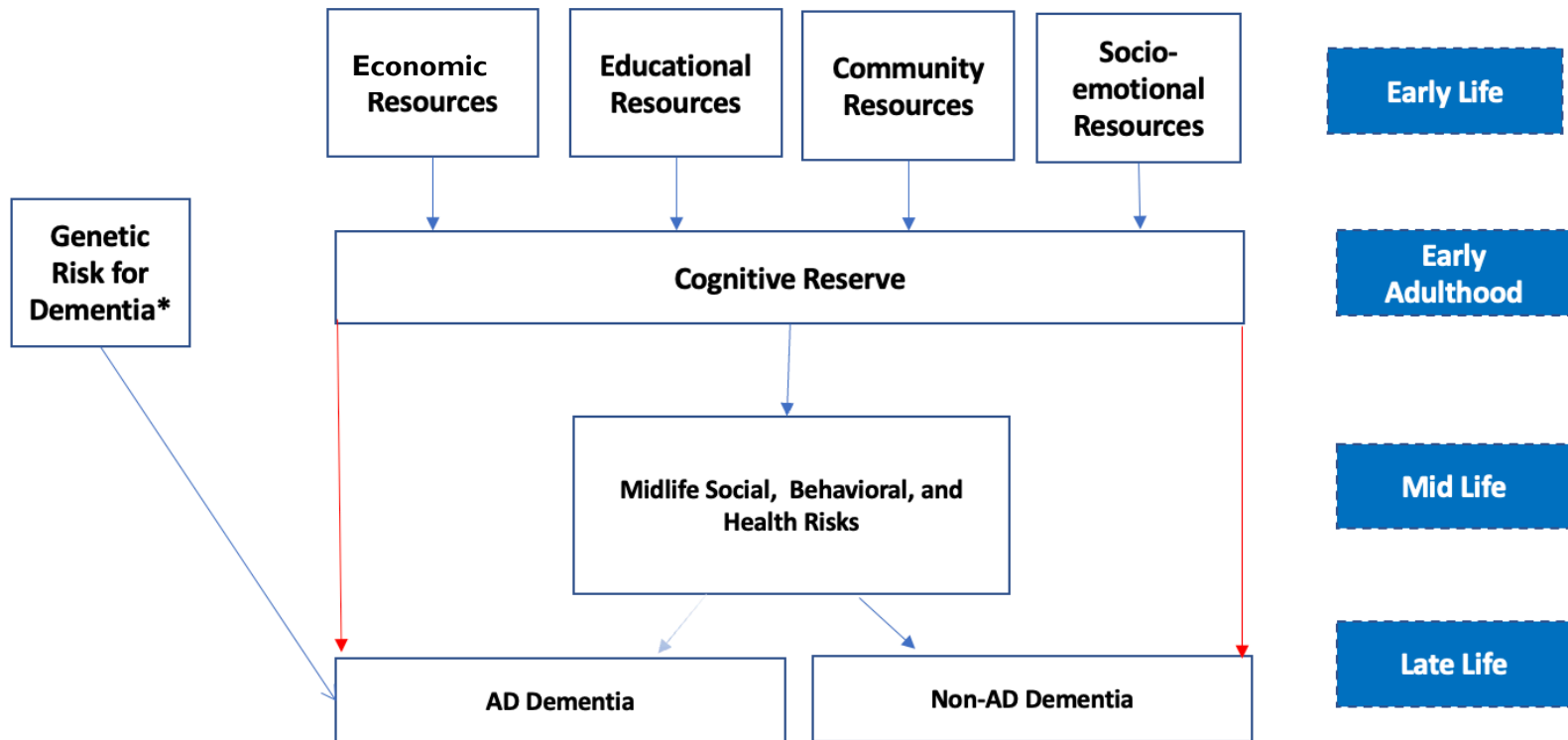
- Robust evidence about early life influences (independent of educational attainment) on mid and late lifer health.
- But cognition and dementia are not ‘health’ per se, and way early life influences them may vary.
- Early life is a critical period for building:
 - Brain reserve: “Neurobiological capital”
 - Cognitive reserve: Ability to manage “insults”
- Robust evidence that social and environmental factors can alter that development.

SOCIAL SCIENTISTS ARE WELL POSITIONED TO
BUILD EVIDENCE ON AN 'EARLY LIFE SOCIAL
EXPOSOME'

SOCIAL FACTORS LIKELY INFLUENCE BRAIN AND COGNITIVE RESERVE IN EARLY LIFE

- Early life economic, educational, community, and socio-emotional resources.
- These are not interchangeable resources and they may differentially affect cognitive change and ADRD. (see Herd and Walsemann, JHSB, Forthcoming).

THE SOCIAL EXPOSOME*: EARLY LIFE AS A CRITICAL PERIOD



*Or what we just call social determinants

**Orange line represents potential modifying influences

EDUCATIONAL RESOURCES

- Existing literature is growing, with an emphasis on quality and substance.
- Mostly focused on cognitive function and decline, still relatively limited on dementia.
- Most attention on dementia is parental educational attainment



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Life course linkages between enriching early-life activities and later life cognition: Evidence from the Wisconsin Longitudinal Study

Emily A. Greenfield ^a , Addam Reynolds ^a, Sara M. Moorman ^b

Black-White variation in the relationship between early educational experiences and trajectories of cognitive function among US-born older adults

Katrina M. Walsemann ^a , Eleanor M. Kerr ^b, Jennifer A. Ailshire ^c, Pamela Herd ^d

College Selectivity and Later-Life Memory Function: Evidence From the Wisconsin Longitudinal Study

Sarah Garcia and Sara M. Moorman [View all authors and affiliations](#)

[Volume 43, Issue 1](#) | <https://doi.org/10.1177/0164027520927137>

Original Scholarship

State-Level Education Quality and Trajectories of Cognitive Function by Race and Educational Attainment

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EMILY ABBRUZZI,^{*,†} and JENNIFER A. AILSHIRE[‡]

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ECONOMIC RESOURCES

- Cumulative SES measures (e.g. Marden et al. 2017 using HRS; Murray et al. using Aberdeen cohort)
- Some evidence about early life deprivation (Zhang, Gu, Hayward 2010)
- Overall, limited evidence on dementia in later life

COMMUNITY RESOURCES

- Environmental toxins (projects using WLS and HRS) (Lee, Lee, Warren, and Herd 2022)
- Rurality risks in the first year of life(Herd et al 2022)
- Segregation (Zhang et al. 2016)

SOCIO-EMOTIONAL RESOURCES

- Robust evidence about how social relationships influence child development, health, etc.
- Very little evidence here about influence on later life cognition and dementia, however.

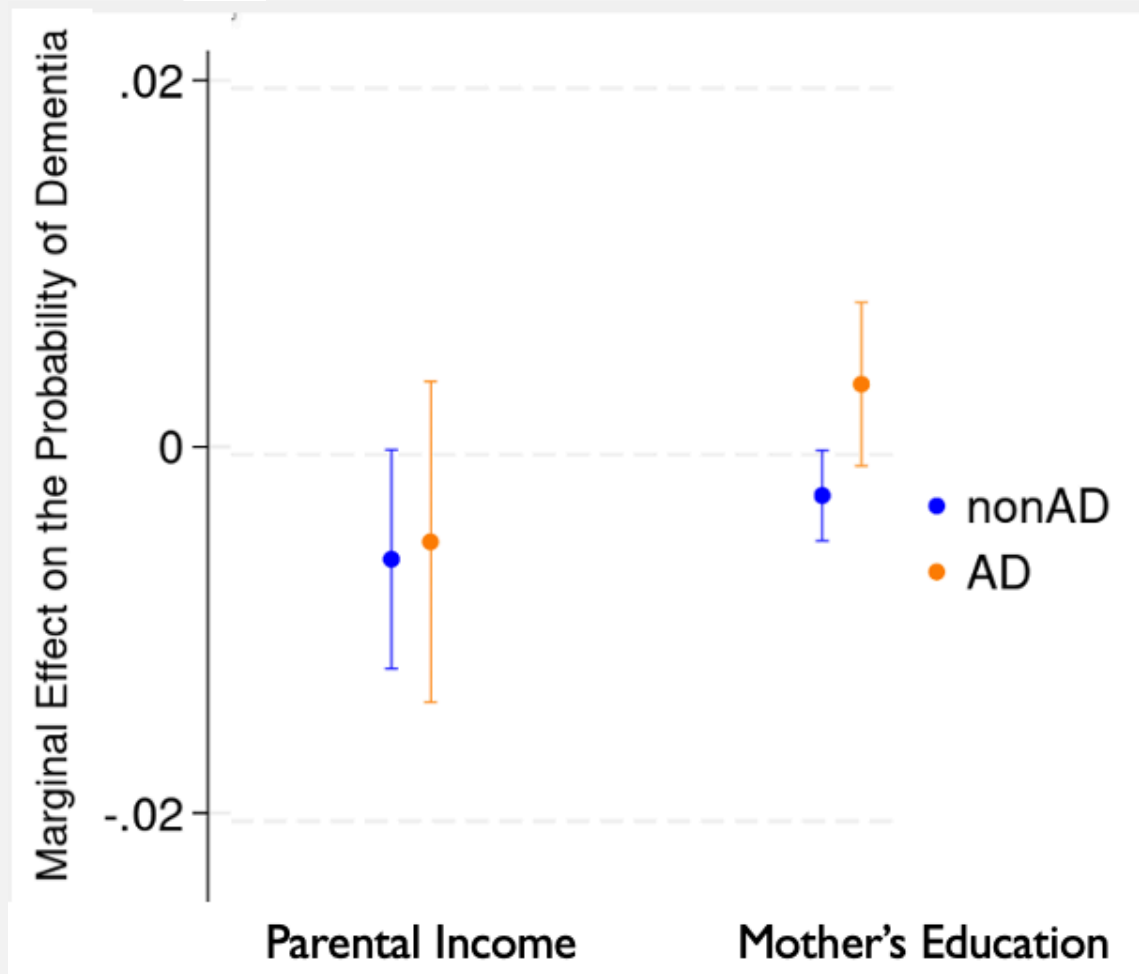
SOCIAL SCIENTISTS CAN CONTRIBUTE DATA!

- Existing data on cognitive aging and dementia still relatively limited on these measures (e.g. it's not a lack of interest, but still relatively limited data resources).
- Robust cohort studies (e.g. WLS, Add Health, EdShare, British cohort studies, etc) are rapidly evolving and can help build evidence.
- We can also add more contextual and early life measures gathered from administrative data to existing biomedical studies (understanding limitations of their sample frames). (Similar to what has been done with HRS/NSHAP).

SOCIAL SCIENTISTS CAN BETTER CAPTURE DEMENTIA

- Adding more nuanced measures of cognition and dementia classifications in our cohort studies (e.g. AD versus Non-AD Dementia because Non-AD dementias shaped more by chronic disease). This has implications for understanding early and midlife risk factors...

INFLUENCE OF EARLY LIFE SOCIAL CONDITIONS MAY VARY ACROSS DEMENTIA TYPE

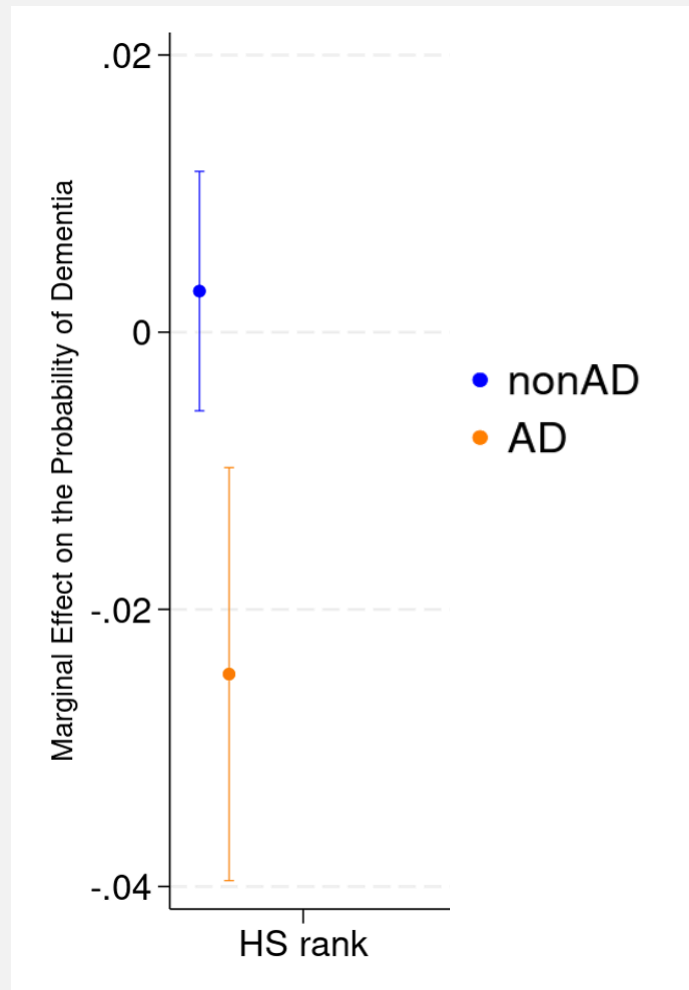


Wisconsin Longitudinal Study, Models controlling for age, sex, APOE, adolescent cognition

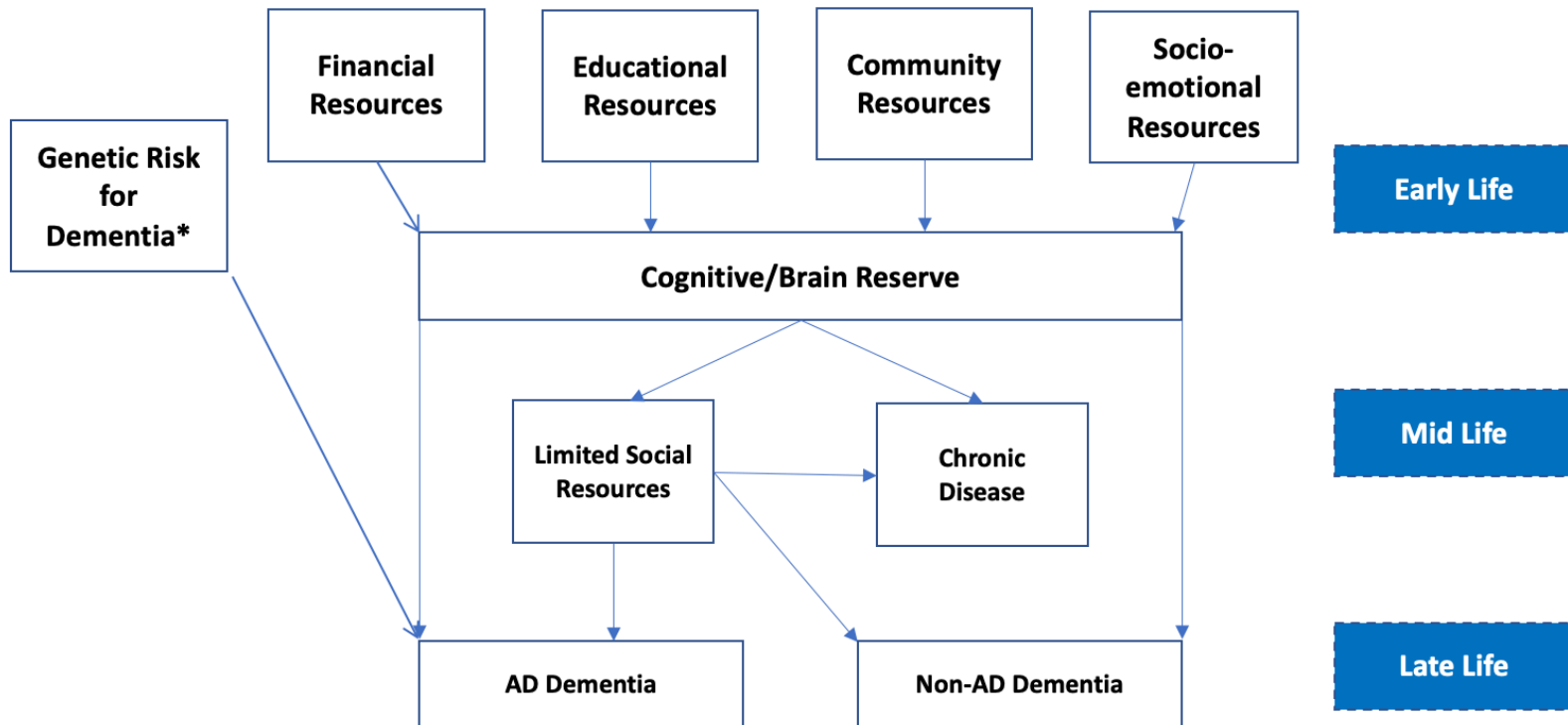
CONCLUSION

- Social and population health sciences have much to contribute to understanding the influences of early life social determinants on dementia in later life.

INFLUENCE OF HIGH SCHOOL ACADEMIC PERFORMANCE MAY ALSO VARY ACROSS DEMENTIA TYPE

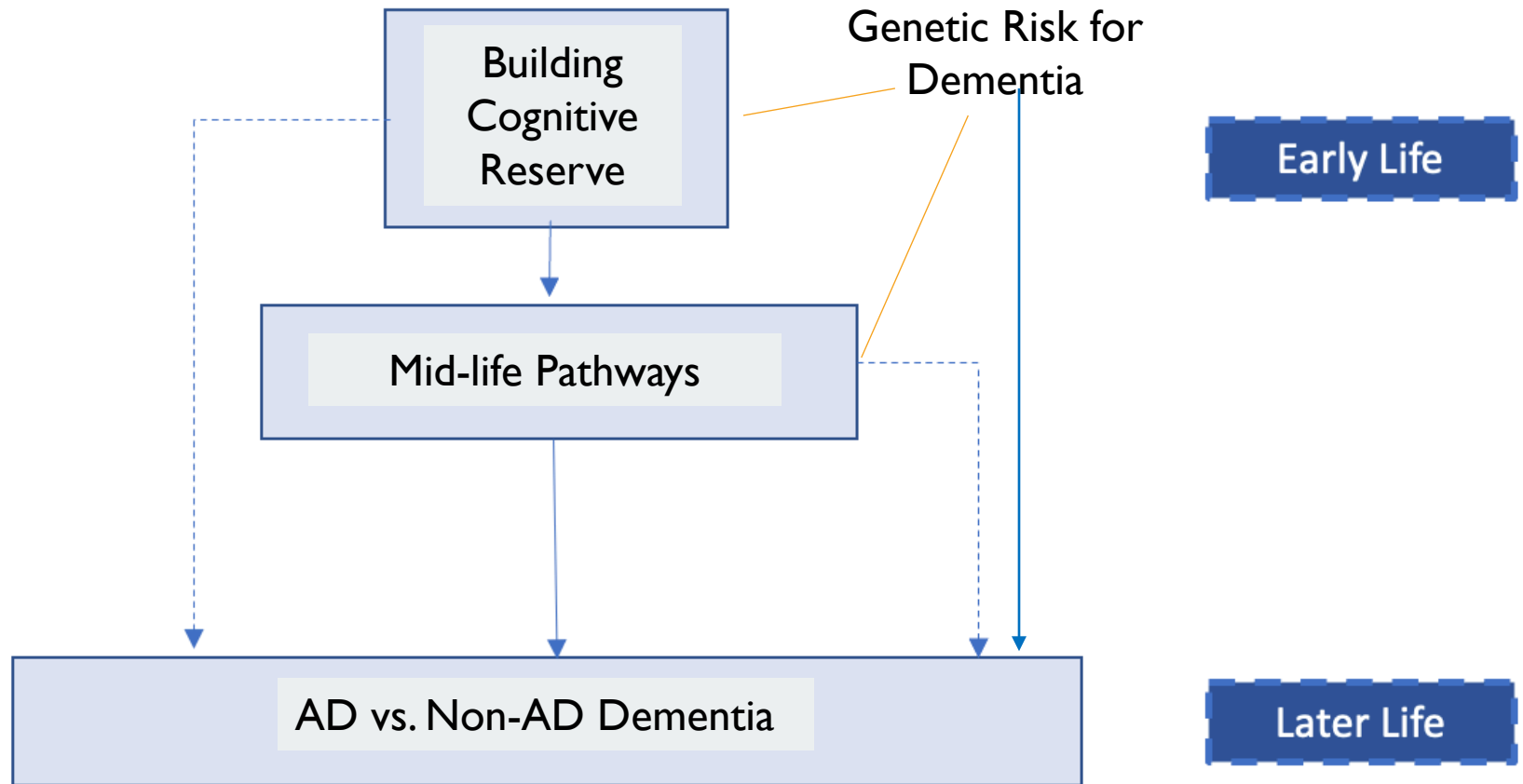


SOCIAL EXPOSOME (OR WHAT WE JUST SOCIAL DETERMINANTS)



*Can interact with social resources

Figure 1. Parsimonious Model of Proposed Relationships*



Orange lines represent interactive influences