

Centre  
for Social  
Investigation  
NUFFIELD COLLEGE

# Is social mobility good for your wellbeing? A biomarker approach using Understanding Society

Patrick Präg and Lindsay Richards  
University of Oxford

27<sup>th</sup> November 2017



UNIVERSITY OF  
OXFORD

# Social mobility table

		Destination Class (own class)		
		Working class	Intermediate classes	Professional etc.
Origin Class (Parents' class)	Working class	55%	22%	23%
	Intermediate classes	41%	29%	30%
	Professional etc.	28%	25%	47%

*Source: Understanding Society Waves B and C, Biomarker sample, N = 10,000*

# The basics: social mobility

- “Mobility” or “Social Mobility” is taken (by sociologists) to mean mobility in any direction/ distance
  - Upwards or downwards
  - Short-range or long-range
  - Immobile = on the diagonal
- Today we are talking about *inter-generational* mobility

# Sorokin's Dissociation thesis (1927)

- The dominant narrative of mobility is as *unequivocally benevolent*
- However, it may come at a psychological price, *even for the upwardly mobile*
- This is what Sorokin (1927) called “the dissociative thesis”
- “Bourdieu believed that the enduring discrepancy between his high academic achievement and low social origin had instituted in him a *habitus clivé*” (Friedman, 2016)

# Our research question

- Does intergenerational social mobility affect wellbeing?

# Cumulative advantage

- Socioeconomic position is a powerful predictor of individual health and well-being
- Pathways
  - resources
  - health behaviours
  - psychosocial factors (personal efficacy, sense of worth, belonging, social support).
- Cumulative advantage
  - Can explain cardiovascular health, self-rated health, psychosocial functioning (Gustafsson et al., 2011; Harper et al., 2002; Pollitt et al., 2005; Hertzman et al., 2001)

# Recent quantitative evidence

- Marshall and Firth (1999) If at all, weak mobility effects
- Houle and Martin (2011) No mobility effect
- Monden and De Graaf (2013) Weak mobility effect
- Nikolaev and Burns (2014) Mobility effects yes
- Clark and D'Angelo (2015) Upward mobility good
- Hadjar and Samuel (2015) Upward mob. detrimental in UK
- Daenekindt (2016) Weak mobility effect
- Zang and De Graaf (2016) No mobility effect
- Zhao et al. (2017) Mobility effects yes
- Chan (2017) Upward mob. positive

# Why so many conflicting studies?

- Difficult to measure
  - My class, parental class, mobility trajectory are all interlinked
- Variety of Statistical methods
- What outcome are we interested in?
  - happiness, life satisfaction, health, depression



# Our study

- Statistical method = Diagonal Reference Model (DRM)
- Outcome = an objective measure of health – Allostatic Load

# Allostasis as a theoretical framework

- Repeated activation of stress response system can lead to pre-disease state, dysregulation of neuroendocrine, metabolic, inflammatory, or cardiovascular systems
- Allostasis: physiological mechanism for adapting to psychosocial stressors to re-gain physiological balance (homeostasis)

# Allostatic Load

- Allostatic load (AL) is the 'wear and tear' exacted on the body by efforts to adapt to life experiences (McEwen and Stellar, 1993) i.e. the body's cumulative response to stress

# Measuring AL in Understanding Society

- Biomarker data
  - Nurse health assessment with blood sample in Wave 2 (for UKHLS) and Wave 3 (for BHPS), i.e. 2010 – 2012
- Biomarkers related to secondary and tertiary stress responses
  1. **Lipid metabolism:** Total cholesterol, HDL cholesterol, and triglycerides
  2. **Glucose metabolism:** Glycated haemoglobin (HbA1c)
  3. **Inflammation:** C-reactive protein (CRP) and fibrinogen
  4. **Body fat deposition:** BMI and waist measurement
  5. **Cardiovascular:** Systolic blood pressure, diastolic blood pressure, and resting heart rate
- Averaged into a single linear outcome (mean 0, std dev 1)

# Descriptive Results

		Destination Class (own class)		
		Working class	Intermediate classes	Professional etc.
Origin Class (Parents' class)	Working class	<b>.30</b> <b>(2,067)</b>	<b>.13</b> <b>(1,063)</b>	<b>.03</b> <b>(1,444)</b>
	Intermediate classes	<b>.12</b> <b>(883)</b>	<b>-.02</b> <b>(761)</b>	<b>-.10</b> <b>(1,053)</b>
	Professional etc.	<b>.00</b> <b>(536)</b>	<b>-.13</b> <b>(578)</b>	<b>-.26</b> <b>(1,466)</b>

*Source: Understanding Society Waves B and C, Biomarker sample, N = 10,000. Average Allostatic Load (Ns in parentheses)*

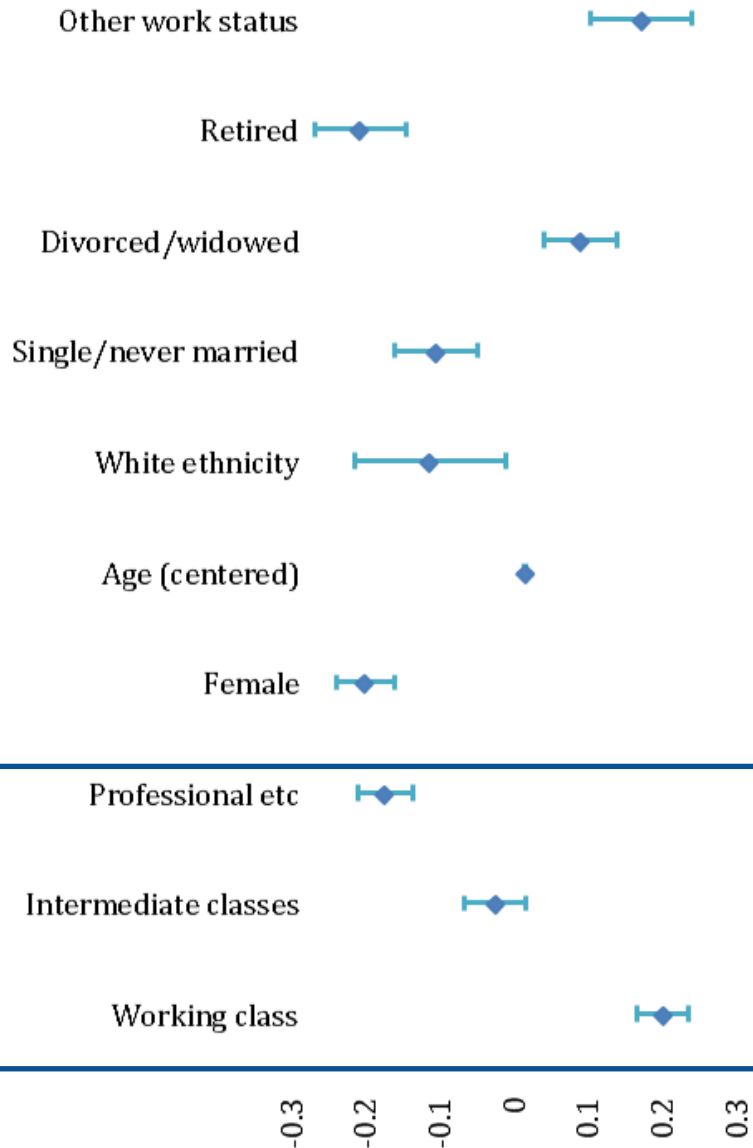
# Diagonal Reference Model

- Sorokin: *if we want to know about being a farmer, ask a farmer from a farming background*
- Non-mobile respondents are the 'core' of that group and the ideal point of comparison
- Some things in common with garden variety regression models, but
  - You get an estimate for each point on the diagonal
  - It estimates a 'weight' parameter. (to what degree does current class matter, compared to parents' class?)

# Control variables

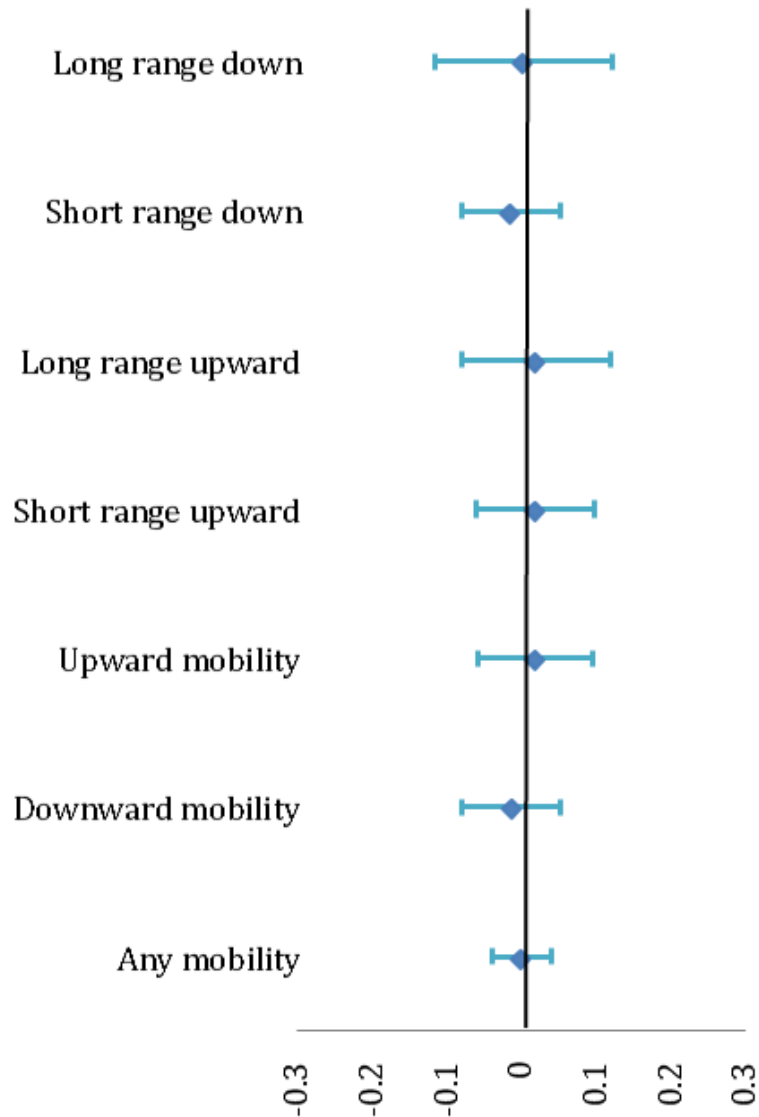
- Age
- Sex
- Ethnicity
- Marital status
- Labour market status
- (Robustness check with Health behaviours - only included in Wave 2)

# Multivariate Analysis I: controls



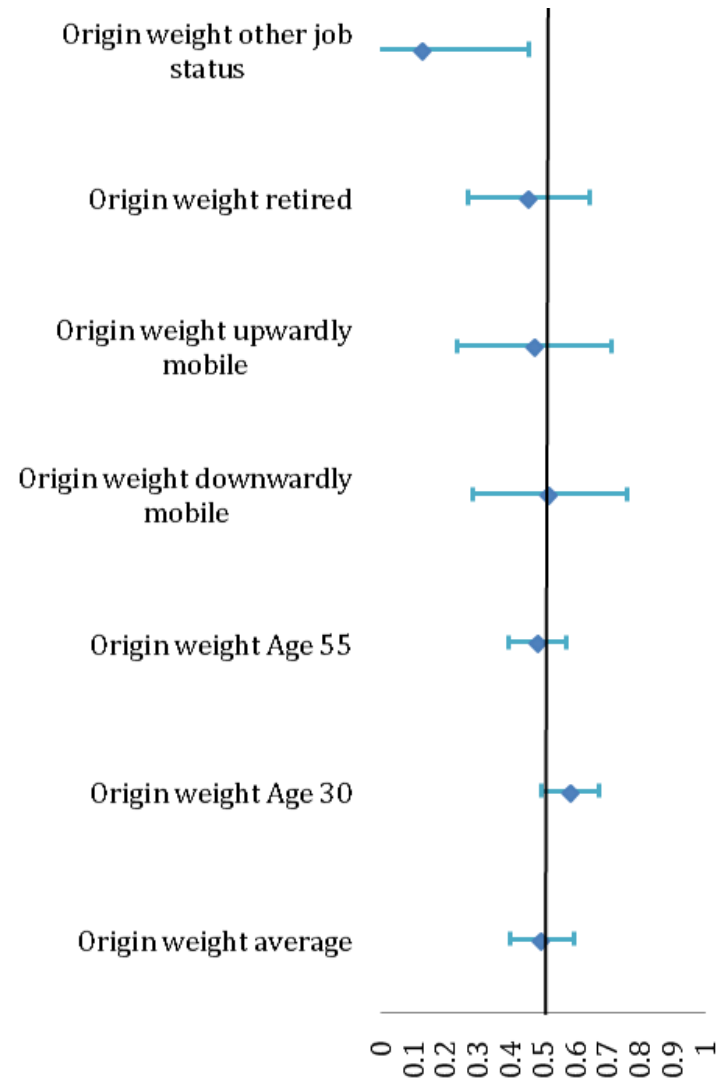
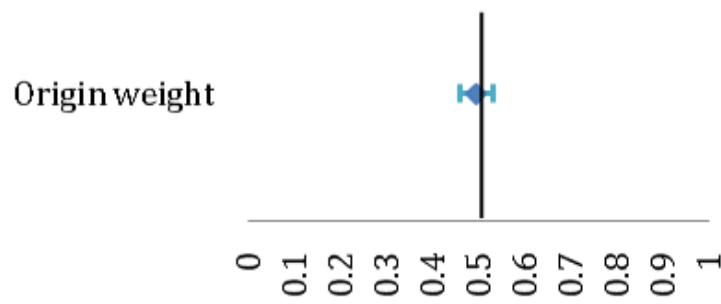


# Multivariate Analysis II: mobility



All controls included

# Analysis III: Which matters more, childhood or adulthood class?



# Quick Summary

- There is a marked class gradient in allostatic load
- Social mobility per se is not associated with AL
- No support for dissociation thesis
- Class of origin maintains a very important influence on allostatic load over the life course – origin and destination class exert around the same influence
  - Though destination may matter more for those outside the labour market

# Policy implication

- In order to maximise health outcomes, we would do better to focus on improving socio-economic conditions for all throughout the lifecourse, rather than treating social mobility as the major policy goal



Centre  
for Social  
Investigation  
NUFFIELD COLLEGE

# The End

Lindsay Richards

[Lindsay.richards@nuffield.ox.ac.uk](mailto:Lindsay.richards@nuffield.ox.ac.uk)



UNIVERSITY OF  
OXFORD

# More on Allostatic Load

- Allostatic load linked to cardiovascular disease, cognitive deficits, weaker physical performance, depression, mortality (e.g. Juster et al., 2010)
- Problems with AL so far: lack of homogeneity in operationalization, measurement, and scoring
- Mauss et al. (2015) review 16 articles on AL measurement in occupational health:
- 39 biomarkers used in total in the 16 studies
- Only two studies out of the 16 use the exact same biomarkers from the seminal Seeman et al. (1997) study

# More on the USoc sample

- Only adults, only GB, only English-language interviews
- Ca. 45% of sample weren't reached or refused nurse interview,
- 12% refused blood sample
- No blood pressure if respondents ate, drank alcohol, exercised, or smoked within 30 minutes before the interview

# More on calculating AL

- Averaging (e.g. Vie et al., 2014):
  1. z-transform each biomarker
  2. Calculate mean score of all biomarkers, weighting for no. of biomarkers per dimension
  3. z-transform weighted mean score
- Counting (e.g. Seeman et al., 2014):
  1. Find clinically relevant, high-risk cut-off points for each biomarker in literature
  2. Count high-risk biomarkers, weighting for no. of biomarkers per dimension
  3. z-transform weighted count of high-risk biomarkers

Counting allows taking medication into account



# More Social Class

- National Statistics Socio-economic classification (NS-SEC): Working class/ Intermediate classes/ Salaried
- Origin: Father's (or mother's if father absent/ missing data) occupation when respondents were 14
- Destination: Current (or last job)
- Also dummy variables for upward/ downward etc.

# Statistical Model

- Conventional regression models are unable to identify social mobility effects = identification problem.
- We use Diagonal Reference Modelling (DRM)
- Has been used in health research before but often other models are still used

# Sensitivity Analyses

- AL as a count of binary risk factors
- Separate models for each physiological system
- Corrected for medication
- Controlling for health behaviours (only available in Wave 2)
- Dominance approach to class
- Stratified by sex