

Delinking Growth and WellBeing?

Lessons from historical data



Auke Rijpma, Jan Luiten van Zanden

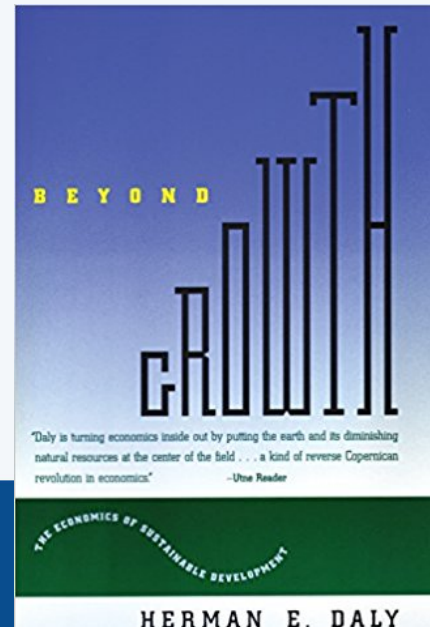


Universiteit Utrecht

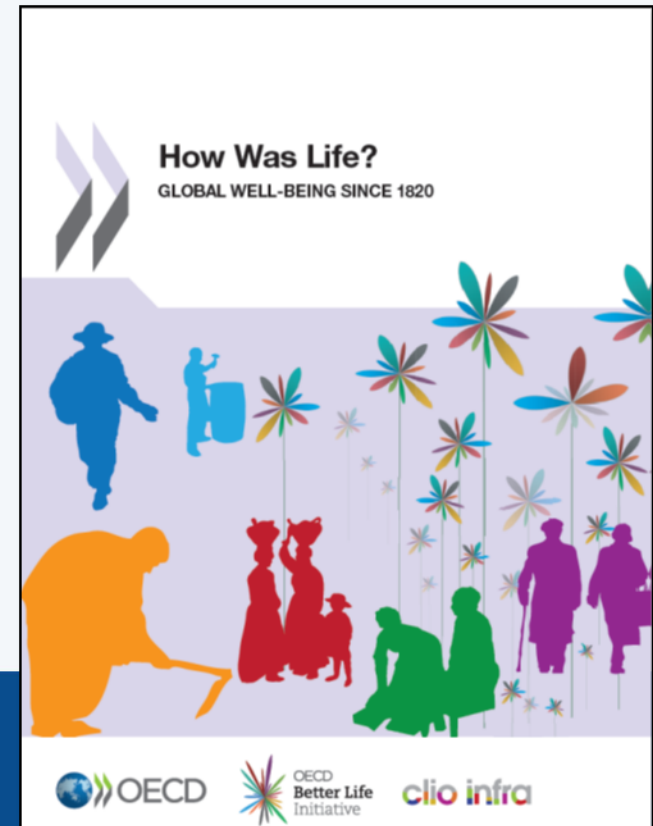
Faculty of Humanities

Sustainability debate

- Economy embedded in eco-system earth with clear limits
- Creates problems such as global warming, biodiversity loss
- What are limits of GDP growth?
- If there is a limit, can we raise well-being without increasing GDP per capita?
- Delinking GDP growth and wellbeing
- This paper: how has this link developed over past two centuries?



Spin-off of **How was life?** **Global Well-being since 1820**



Universiteit Utrecht



clio infra

Cooperation of two projects



OECD
Better Life
Initiative

- **OECD: Better Life Initiative:** multi-dimensional approach to well-being, resulting a.o. in the *How's Life?* report



- **Clio Infra project**, global network of economic historians to measure various dimensions of long-term evolution of world economy 1500-2010.



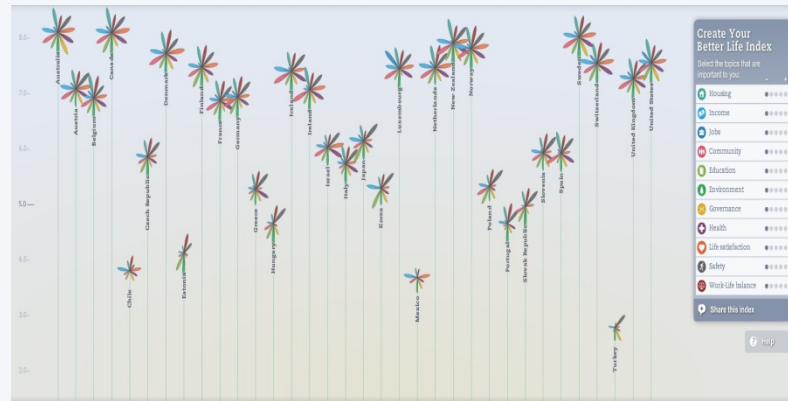
Universiteit Utrecht

Faculty of Humanities

Well-being and the OECD



**Better policies for
better lives**

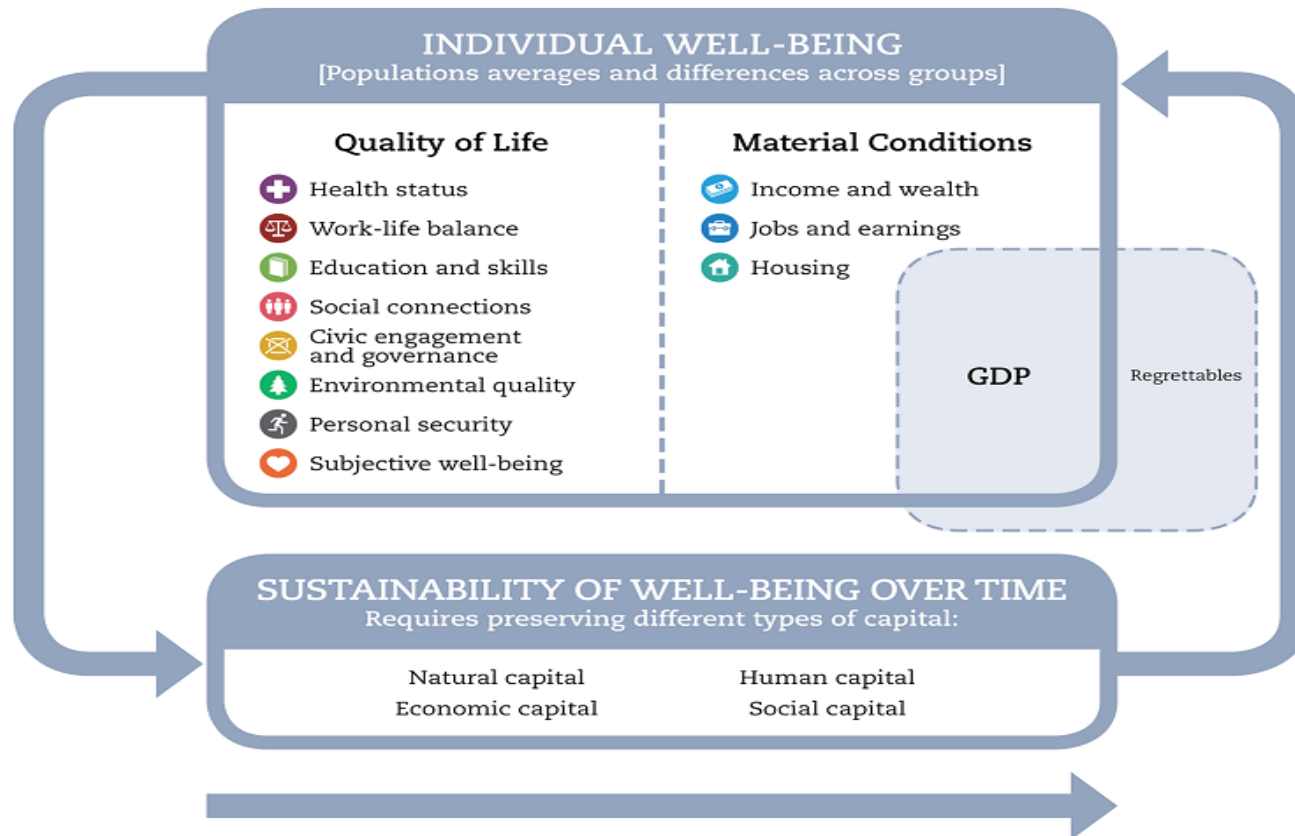


Better measures

**Subjective well-being
Social contact
Governance...**



The How's Life Well-being Framework



CLIO INFRA

- Large 'research infrastructural' project funded by NWO
- Universities of Utrecht, Groningen, Tuebingen, International Institute for Social History
- Standardization historical statistics related to Global Inequality 1500-2010
- Linked to International Economic History Association (IEHA)



CLIO INFRA



- Maddison project: historical national accounts; international team of experts
- Similar collabs for human capital, demography, institutions, biological standard of living, sustainability, institutions, wages and prices, gender inequality, income inequality
- Authors of the *How Was Life?* chapters
- Open access: www.clio-infra.eu

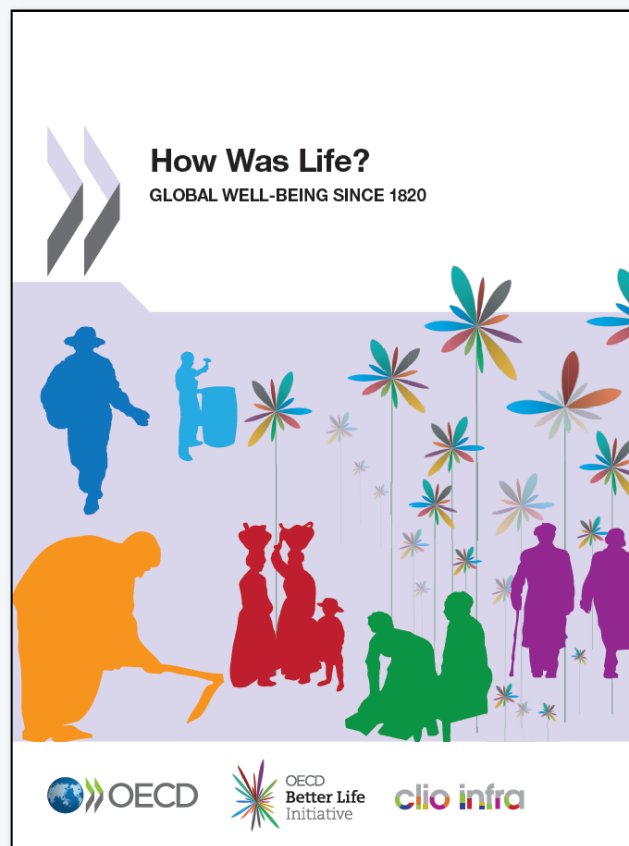
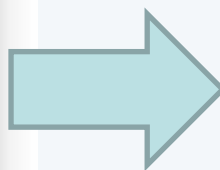


Aim of cooperation

- Present **state-of-the-art estimates** on various dimensions of development of well-being in *world economy from 1820 to present* (“GDP and beyond”)
- **Contribute to the discussion** about the broadening of the welfare concept used to characterize socio-economic development
- Indicate **relevance** of going “beyond GDP”, also in historical analysis



The importance of historical statistics



Dimensions covered in *How Was Life?*

Dimension	Indicator(s)
Economic standard of living	GDP per capita
Inequality	Income inequality; Real unskilled wages
Health Status	Life Expectancy; Height
Education and Skills	Educational attainment
Personal security	Homicide, Incidence of warfare
Civic Engagement and Governance	Political institutions
Environmental Quality	SO ₂ ; CO ₂ ; Species abundance
Gender Inequality	Various indicators + composite index
Overall indicator of Well-Being	Composite indicator (experimental)



Coverage

- Data for 25 major countries and another 100+ since 1820
- Averages per region & world as a whole
- Innovative ways of estimating comprehensive well-being index (final chapter)
- *How was life?* 2.0 in preparation, covering: working time; poverty, inequality of wealth, gender inequality, suicide ('subjective unhappiness') etc.



Standard interpretation: why has wellbeing increased?

- Growth of Wellbeing in past 200+ years
- Caused by Economic Growth
- Caused by Technological Change
- Increases of Wellbeing are made possible/financed by economic growth (social transfers, health care, education) or made possible by higher levels of 'development' (political participation)



Beyond GDP debate

- Wellbeing is the key 'aim' of economic development
- Wellbeing is multidimensional
- Changes in Dimensions of Wellbeing have their own dynamics (Preston curve life expectancy)
- Changes in certain dimensions of wellbeing may 'lead' and may cause GDP growth



Theoretical

- New Institutional Economics (North/Acemoglu et.al.):
Better institutions cause economic growth
(‘democracy’/better institutions is important dimension of wellbeing)
 - Inequality of power bad for economic growth
 - Gender inequality bad for economic growth
 - Income inequality bad for economic growth
- New growth theory/Unified Growth Theory (Galor):
human capital/education is cause of economic growth
- Long life expectancy, high level of security, all favor economic growth
- Furthering wellbeing is consistent with furthering economic growth

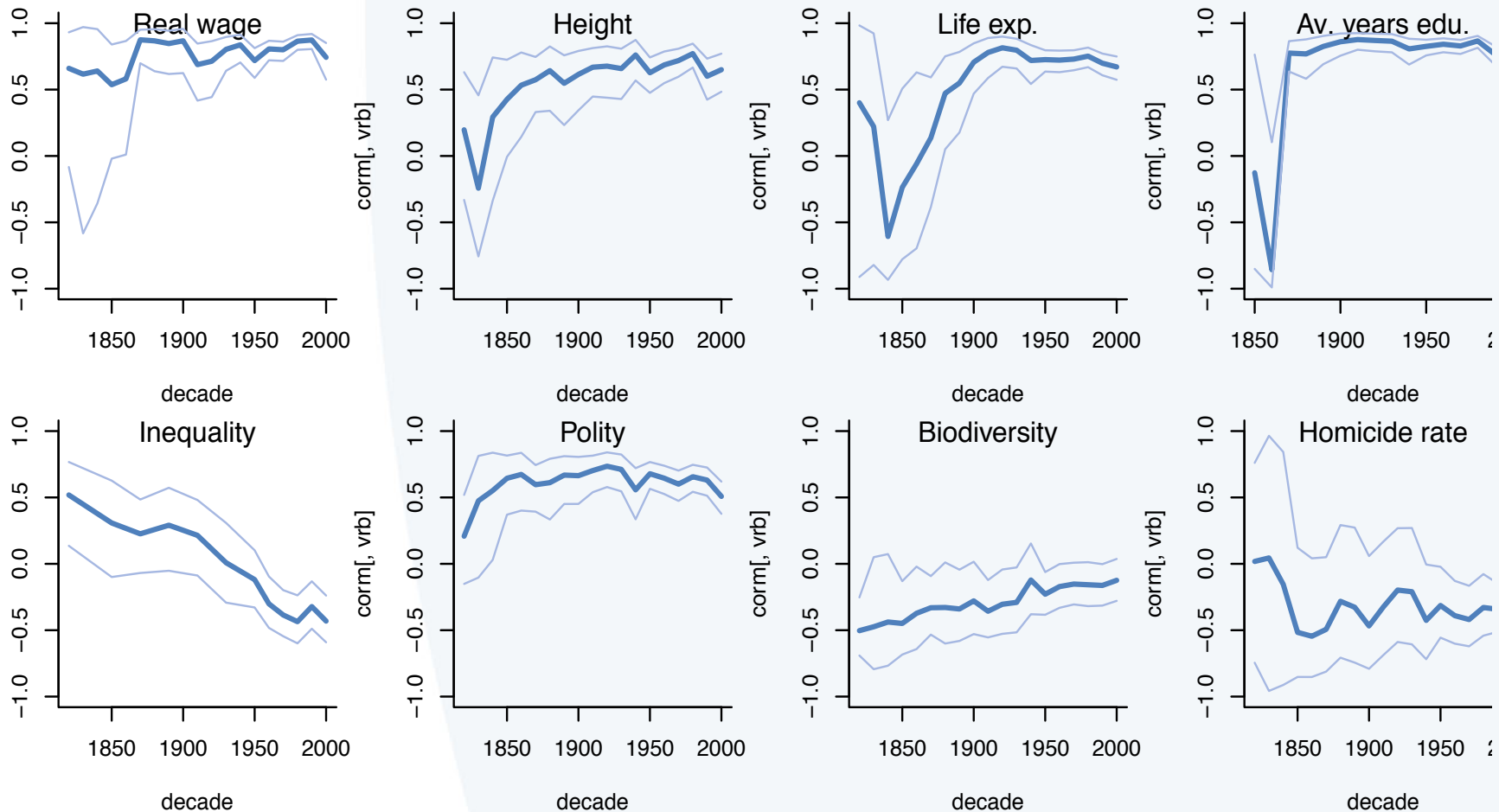


Which patterns do we see in history?

- Two groups of well-being indicators
- Group1 indices correlate very strongly with GDP per capita: real wage, educational attainment, life expectancy, polity2
- But link may change over time (see Preston curve)
- Group2 do not clearly correlate with GDP per capita; Income Inequality, Security, and Environmental quality



Correlation with GDP/c over time

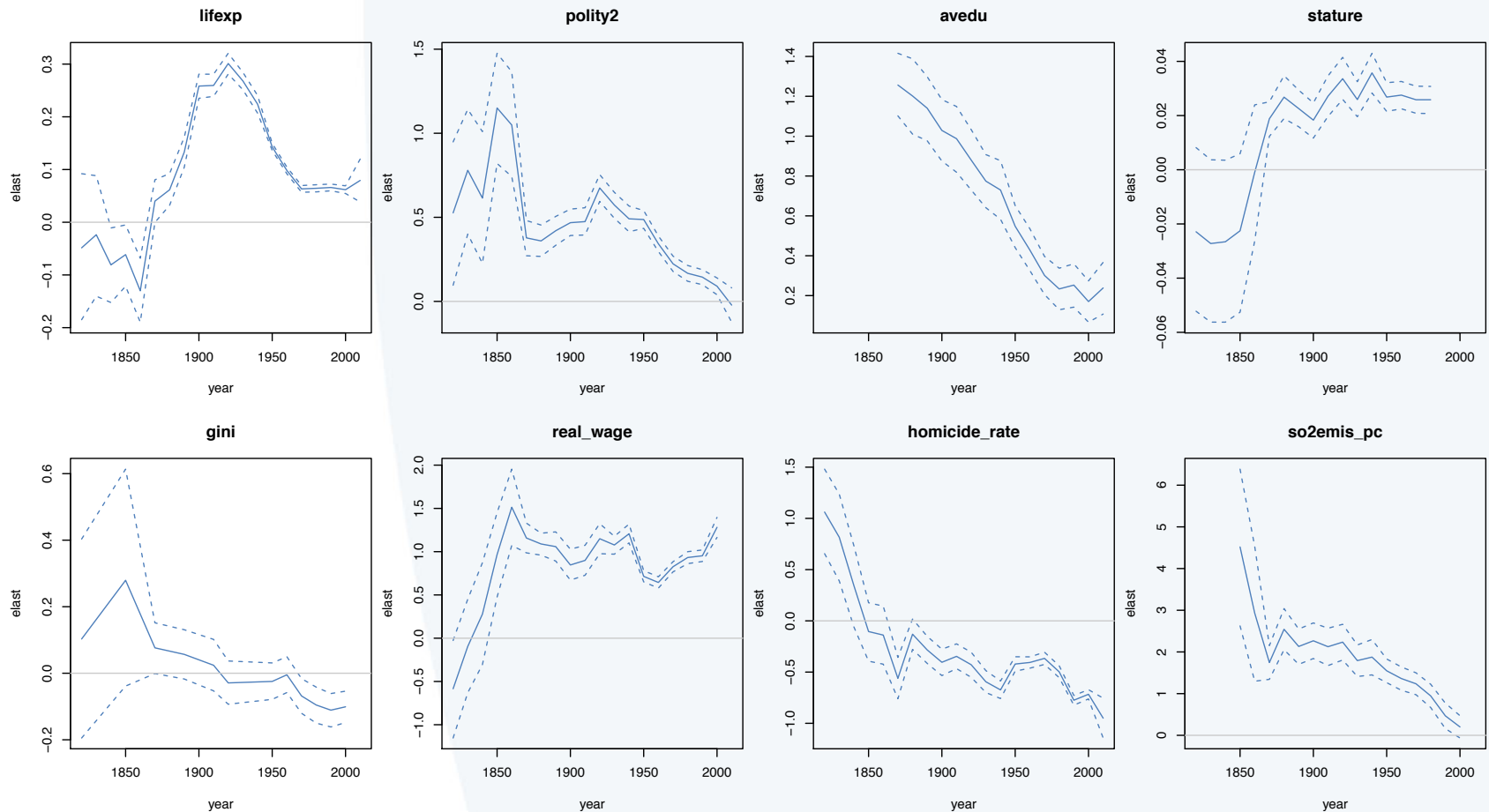


Link GDP per capita - wellbeing

- Three phases:
 - to circa 1870: weak/no link
 - 1870 onwards: strong link
 - mid-twentieth century onwards: growing “Beyond GDP bonuses”
- Gains in Well Being independent from GDP growth may result from
- Group 1: a shift in the relationship between this dimension of Well-Being and GDP per capita
- Group 2:



Elasticities wrp GDP/c over time



How did the link between GDP and Well-Being change historically?

- 19th century: early growth paradox: rapid industrialization and growth did not result in increased well-being
- Early urbanization and industrialization had strong negative externalities
- Standard of Living debates
- Changes after about 1870: agricultural invasion (cheap food), medical care (germ theory disease), social transfers, political voice etc..



Changing Relationship

- After 1950: increases in well-being become (increasingly) autonomous
- Africa after 1970; Latin America 1980s; Japan after 1990: slowdowns of economic growth do not necessarily result in slowdown increase well-being
- Different ranking of western Europe and Offshoots
- Relevant for Europe after 2007?

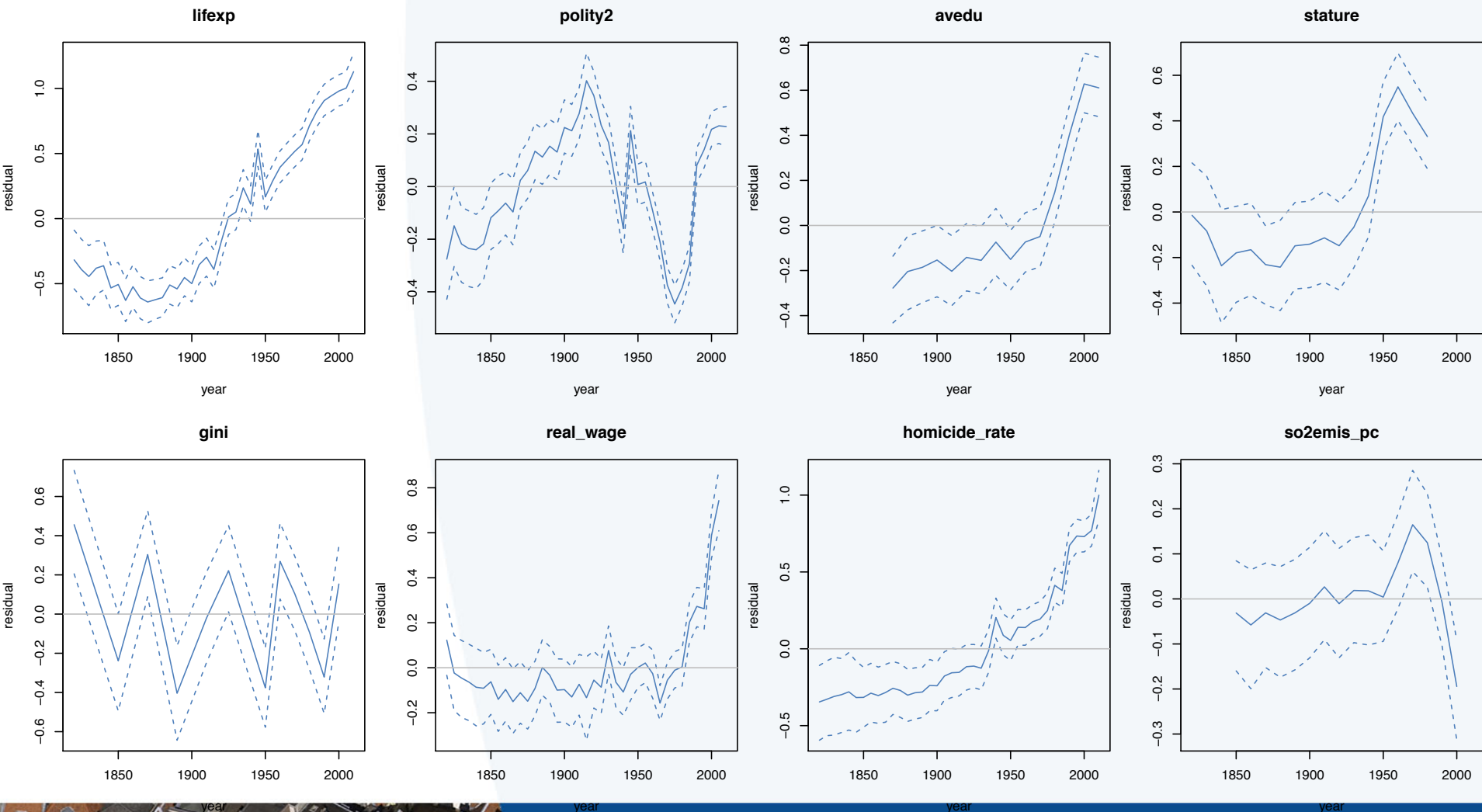


Beyond GDP bonus

- Estimate regression of various wellbeing indicators on per capita GDP + a set of time dummies.
- $wb = b0[time] + b1*log(gdppc) + e$
- Can also do this for composite indicator of wellbeing to summarise trends
- Estimate this using factor model ($wb[j] = b0 + b1[j]*CI + e$)



Delinking Wellbeing and GDP?



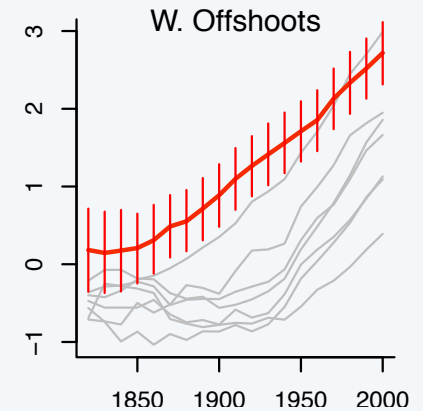
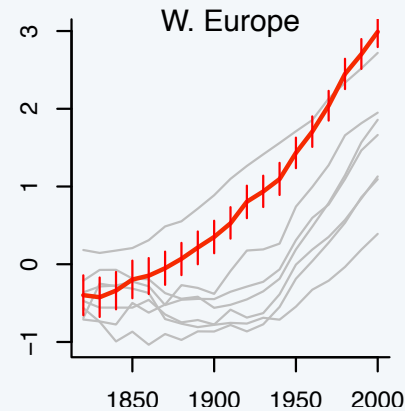
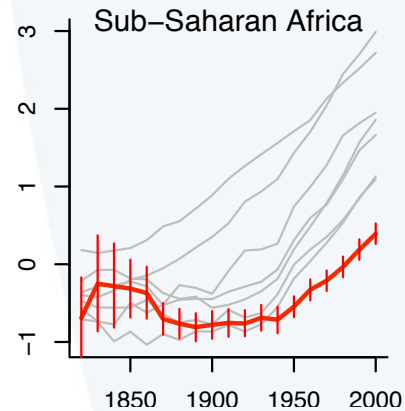
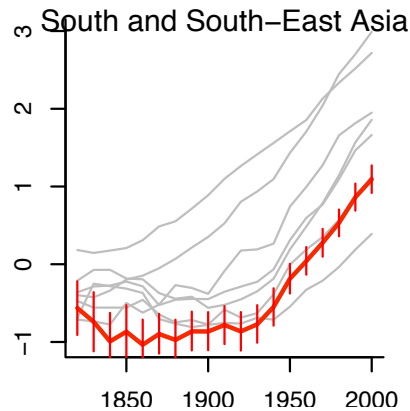
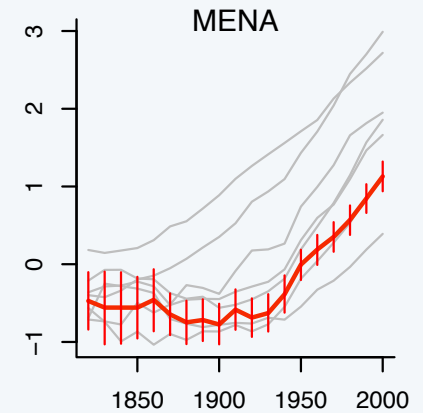
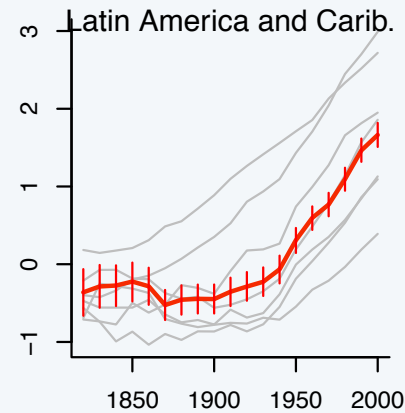
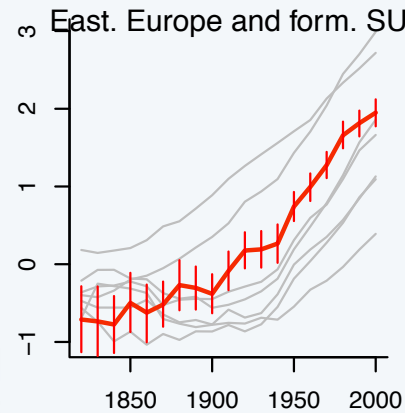
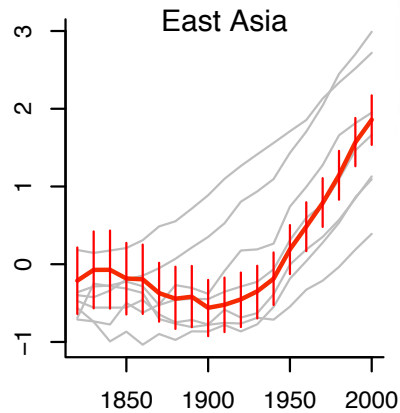
Delinking Wellbeing and GDP?



Estimates and approx. 90 percent confidence intervals of unexplained time effects on a composite indicator of wellbeing given standardized $\log(\text{GDPpc})$, 1820s–2000s



Composite variable/region

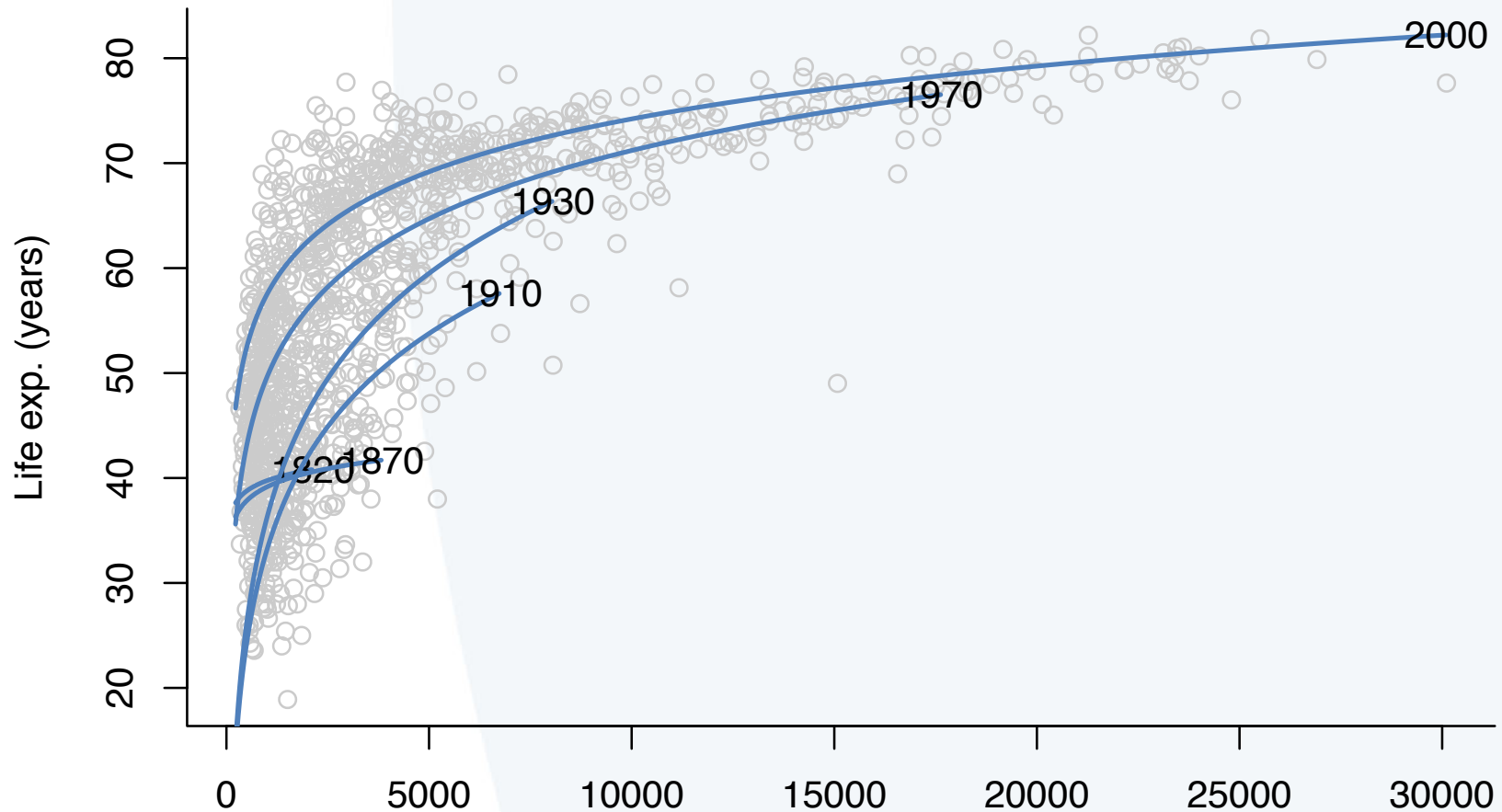


Explaining delinking

- Change in 'production function' of dimensions of wellbeing: same income gets country more wellbeing.
- In health care/life expectancy ('hardware' technological change)
- And in education after 1960
- No clear patterns elsewhere

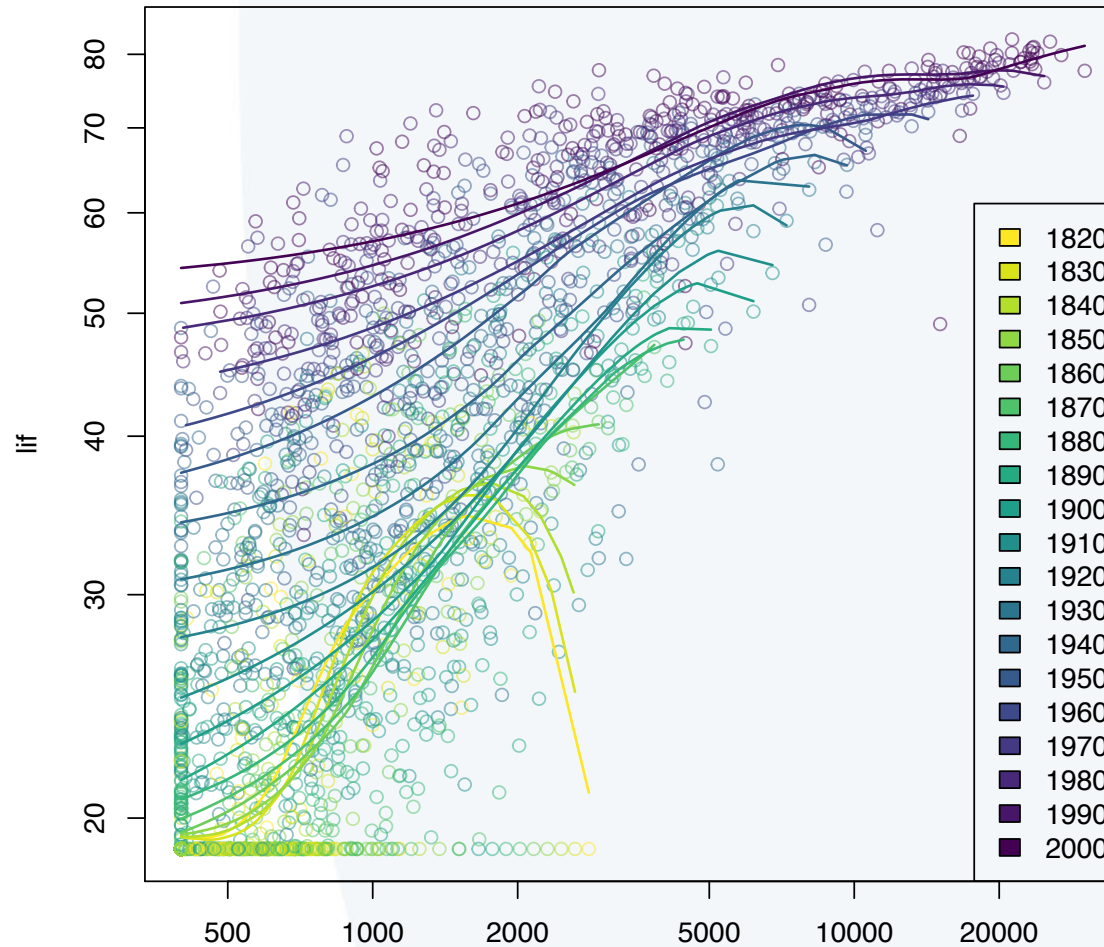


Preston-curve: GDP/c & life expectancy

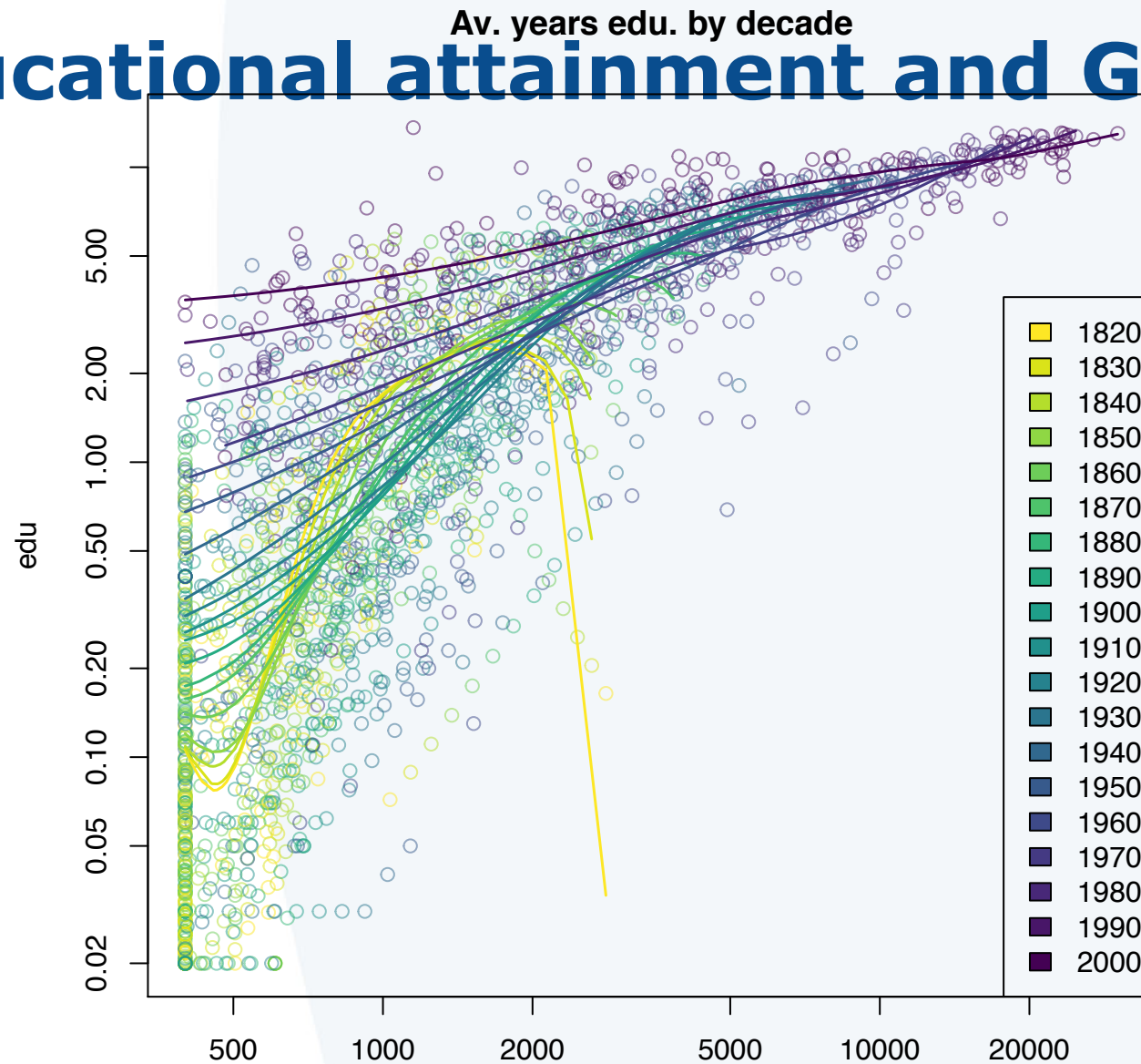


Life Expectancy and GDP

Life exp. by decade

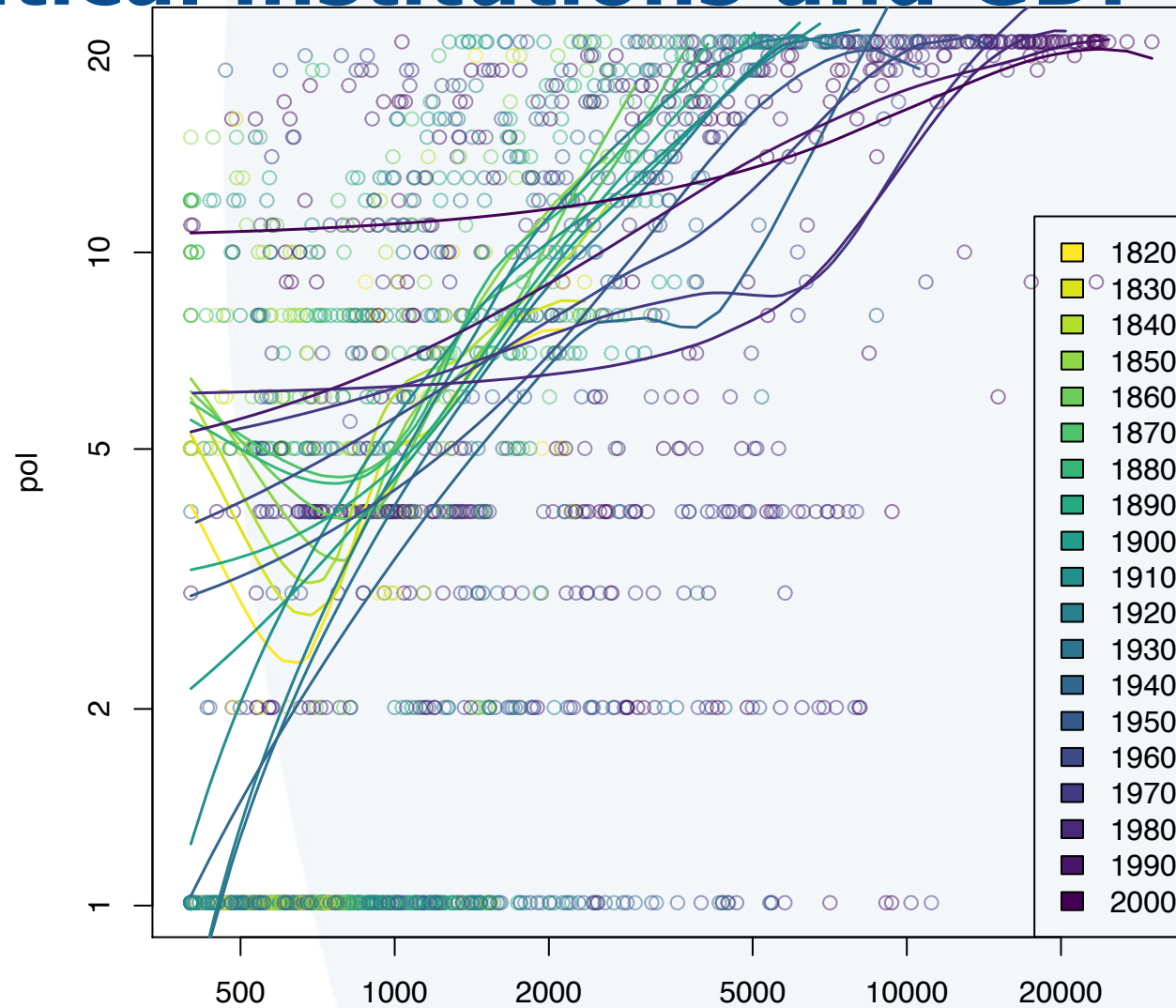


Educational attainment and GDP



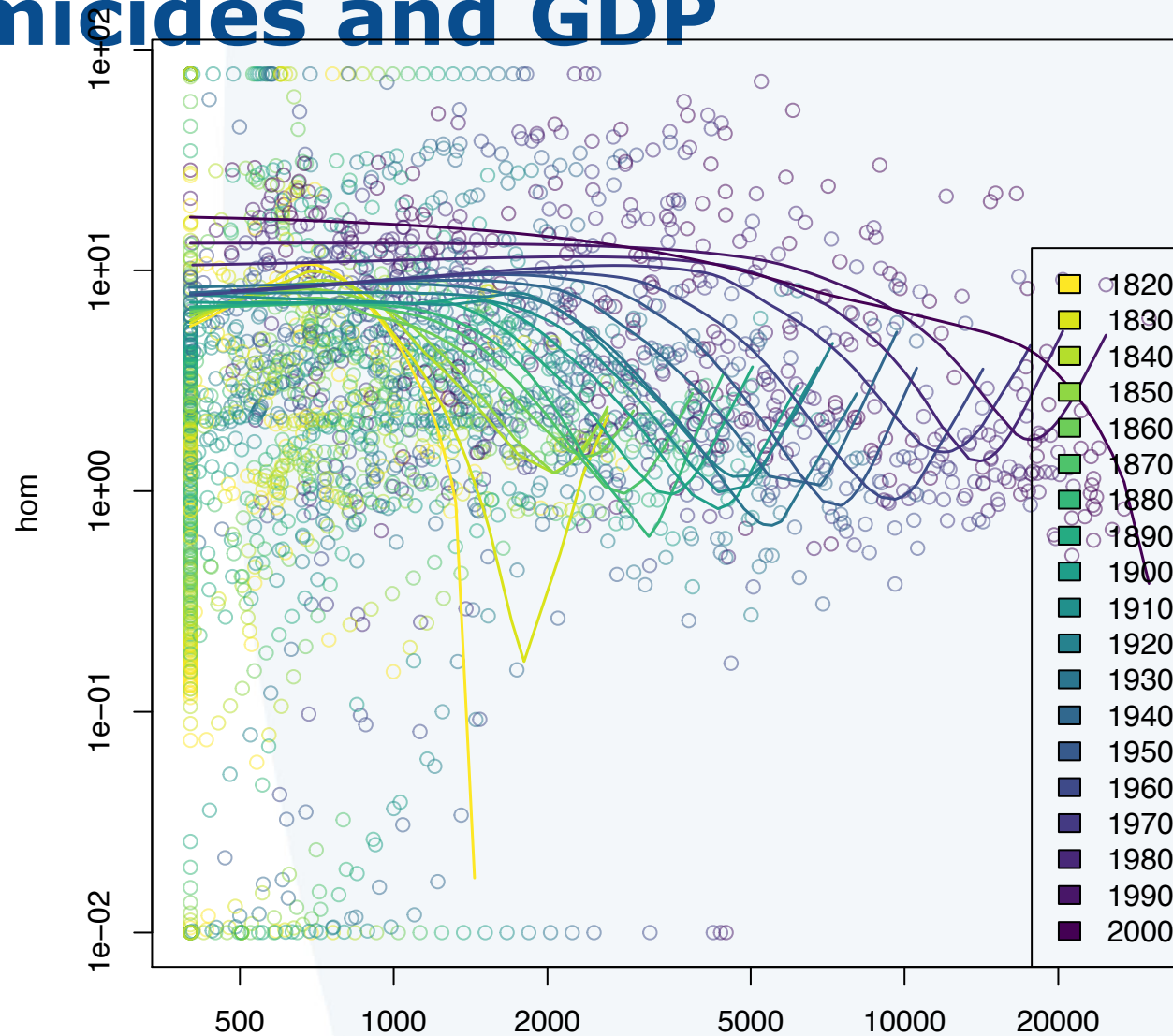
Political institutions and GDP

Polity by decade



Homicides and GDP

Homicide rate by decade



The changing link between GDP and Wellbeing: mechanisms

- Preston curve: technological changes in health system cause a shift in relationship between real income and life expectancy – ‘free’ gains of wellbeing
- Shifting education attainment: parents/children want higher level of education at the same income level (education as luxury consumption?) and/or states invest more in education at same level of income in order to further economic development – not really free gains of wellbeing

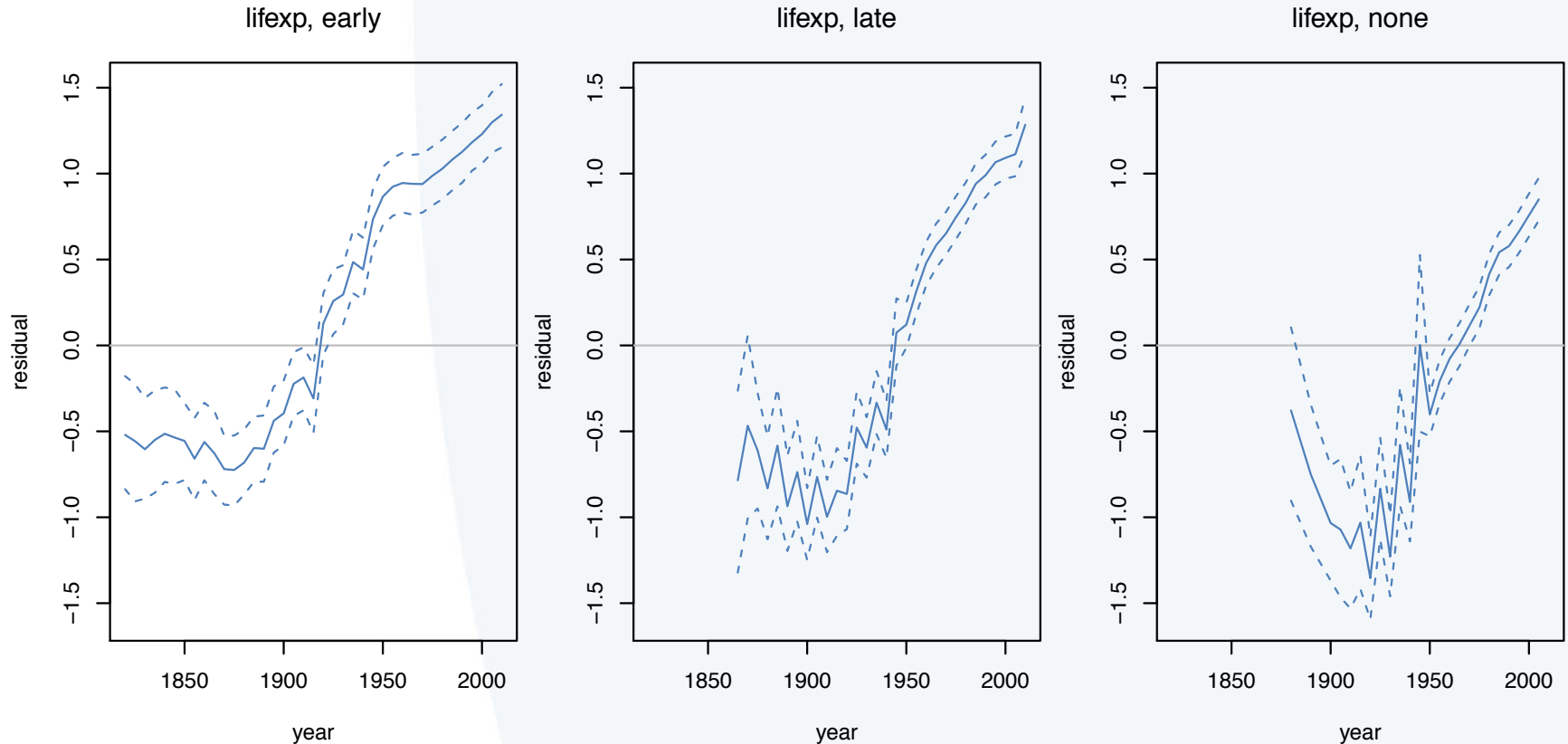


The changing link between GDP and Wellbeing: mechanisms

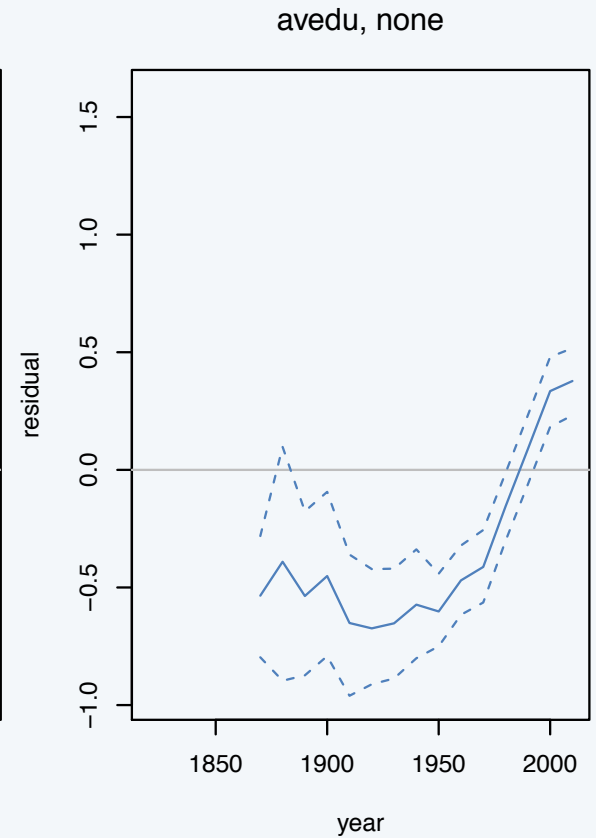
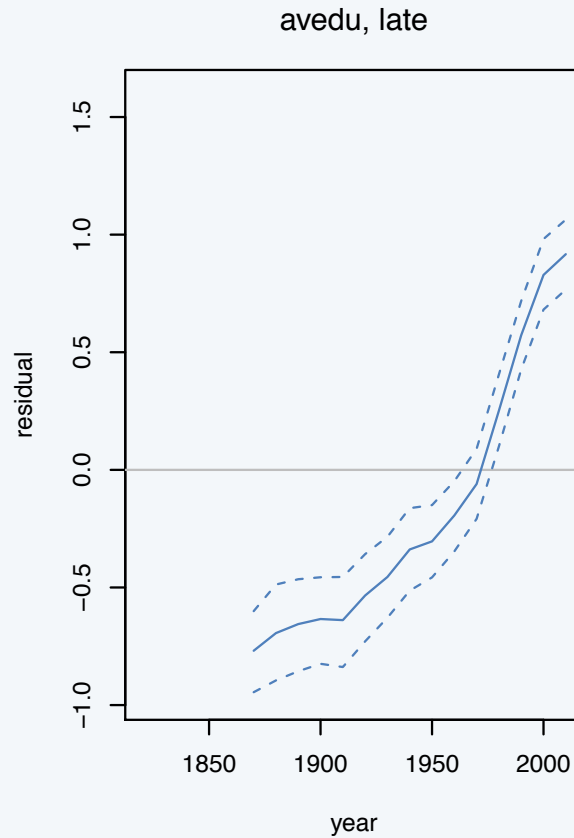
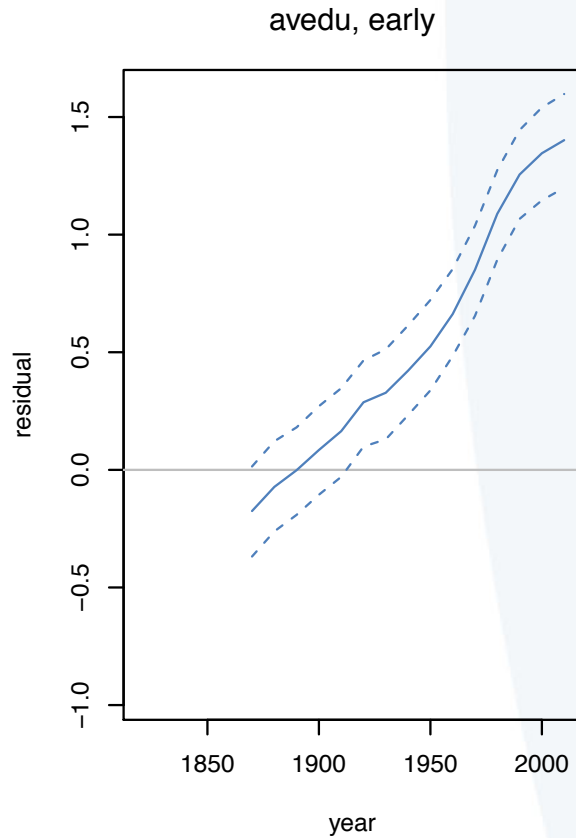
- Presumably diffusion of knowledge, technology, preferences and policies has a big part in this
- Can try to assess this by estimating Beyond GDP bonus by development club: early/late/none.
- Strikingly, unexplained effects slightly larger in early developers



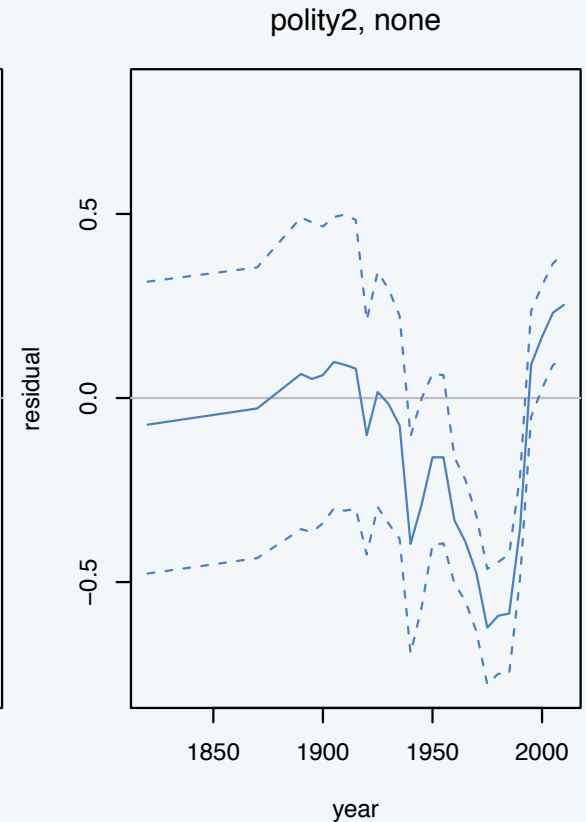
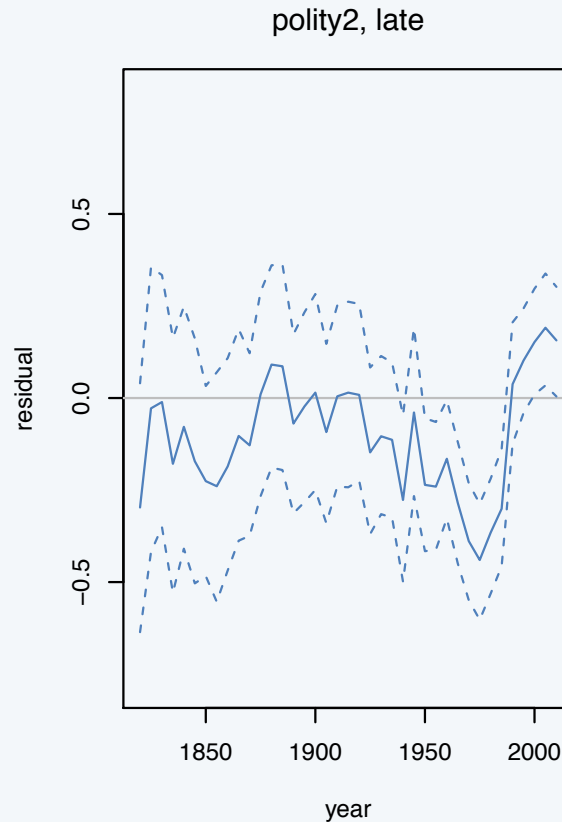
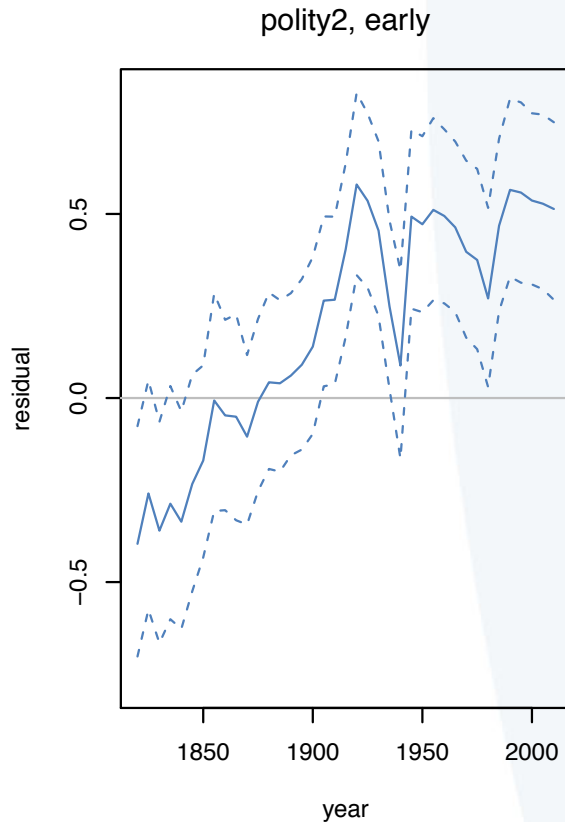
Unexplained life expectancy, by development group



Unexplained education, by development group



Unexplained democracy, by development group



Regional stories about delinking

- Latin America: until 1950 level of GDP per capita higher than relative level of well-being
- Changes in recent years: wellbeing increased (much) more than GDP per capita
- 'Pink tide' governments probably contributed to this.
- Comparison US (Western Offshoots) – Western Europe:
- First has much higher level of GDP per capita, but WE has overtaken USA in terms of wellbeing (crime, inequality, life expectancy, education)



Is it possible to increase wellbeing with less economic growth?

- Yes 1: certain measures of wellbeing are not related to GDP: inequality, security, environment
- Yes 2: other measures of wellbeing are related to GDP, but this link shifts upwards over time
- Historical cases point to the relevance of this (Latin America, comparison US/Europe)
- Yet, how much is really possible without increase in GDP per capita?
- “Free wellbeing” not greater in developing world, so key growth challenge still present

