

 Fakultät für Gesundheitswissenschaften
 School of Public Health – WHO Collaborating Center



Public Health in Germany: East vs. West or Poor vs. Rich?

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Global Health in the 21st Century - celebrating 50 years of Heidelberg's contribution
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Social inequalities and health

- Vertical: “top” vs. “bottom” (income, status, educ.)
- Horizontal: e.g. gender, marital status, nationality
- **Place or “context”** with additional explanatory potential? Place/context comprises:
 - a *social composition* in terms of employment quota, mean income, etc.

and specific features of the

- *built environment* (e.g. air quality, noise, walkability)
- *social environment* (e.g. social capital, crime)

Public Health in Germany

1. Germany: “East vs. West“ or differentiation at small-area level?
2. Do small-area “contextual” factors contribute to health inequalities?
3. How should we reduce social and health inequalities?

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Germany: inequalities and health 22 years after Reunification

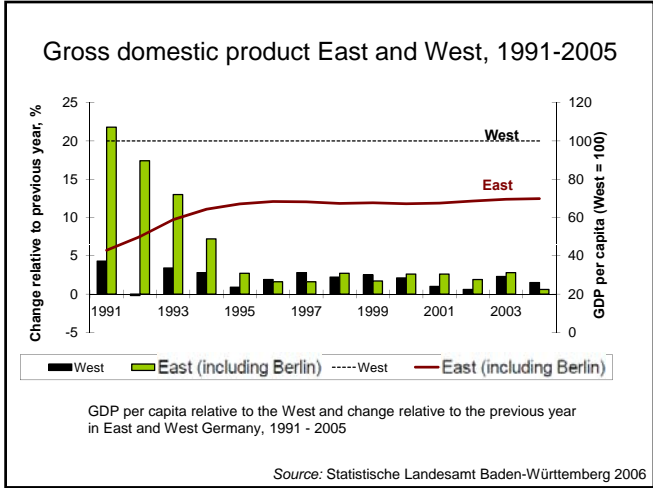
Social inequalities in Germany

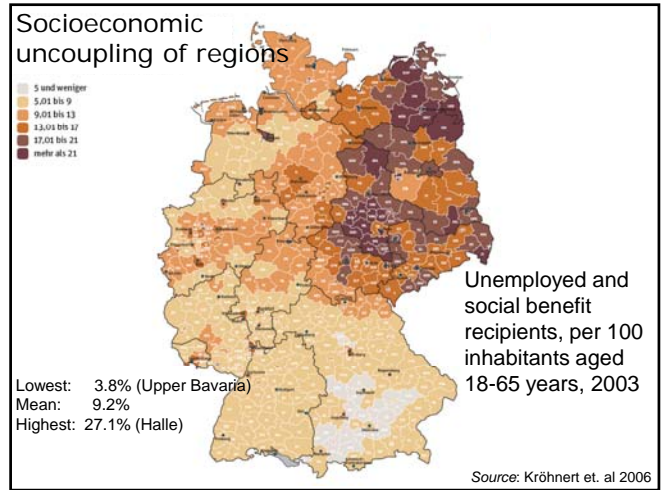
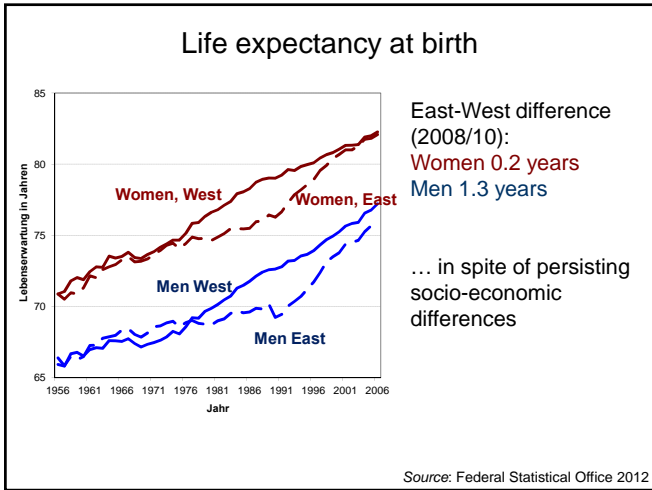
Basic Constitutional Law (Grundgesetz Art. 72, Abs. 2) postulates **“creation of equal living conditions”**

There “... were and are (...) **major differences in living conditions** throughout this republic – between **North and South** as well as **between West and East.**”

“Those trying to level them will cement the subvention state and will lay upon the young generation an intolerable burden of debt. (...) What is important is **to create room for peoples' ideas and initiatives**”.

(Then) Federal President Köhler, 2004



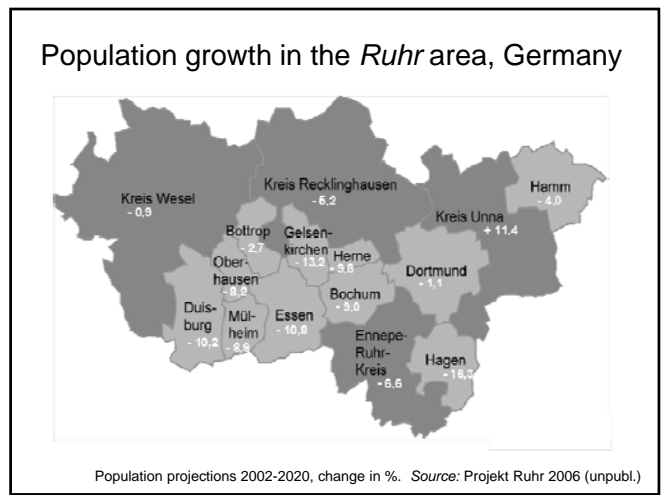
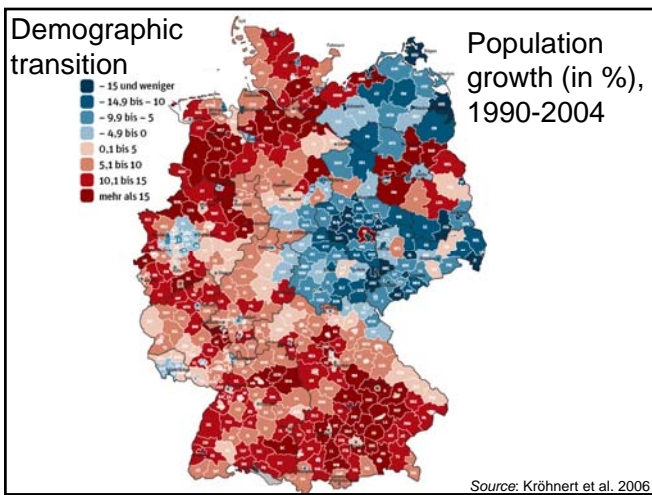
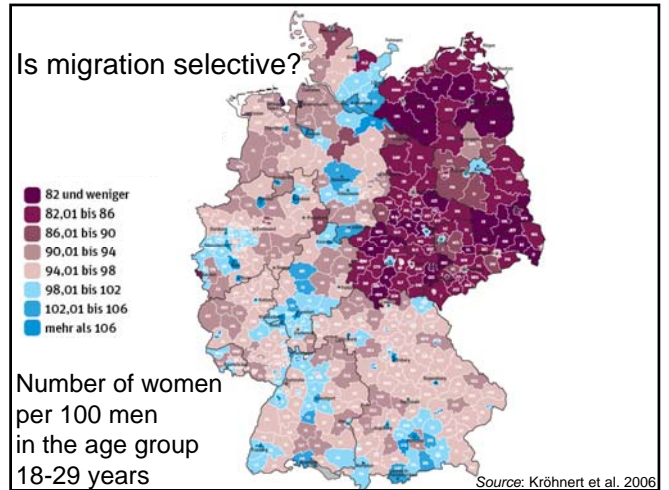


Net East-West migration, Germany, since 1945

Time period	Net migration to the West
1945-48	732 000
1949-61	2 687 000
1961-88	673 000
1989/90	784 000
1991-2004	781 000

Net East-West migration since re-unification: > 1.7 million; balanced since 2011

Source: Müller 2005; Berlin-Institut 2012



„Redistribution of a shrinking population“ –

in East *and* West

Bergheim 2003

Effects on local communities

- Decline in local income tax, losses in federal financial transfers to cities
- Net infrastructure cannot be partitioned
 - Roads
 - Water pipes
 - Sanitation system
- Shrinking of cities not a contractive process, instead: “perforated cities”

Herz & Marschke 2005

Consequences on health?

Example: Life expectancy Ruhr area (2002-04):

- Men **1.3 years** below NRW average
- Women **0.9 years** below NRW average

(East-West difference: **1.3** and **0.2** years)

Excess mortality in Ruhr area:

- middle age group 40-49 years most affected
- causes of death avoidable (CVD and alcohol-related)

Klapper et al. 2007

Disparities increasing?

Association between area deprivation and *health*?

“Contextual” factors and health inequalities

Contextual effects on health

- Linkage of socioeconomic panel data (SOEP) with small area data (INKAR) for all 439 cities/counties of Germany

“...substantial [and] *increasing* regional disparities were identified across the *whole* of Germany...”

Voigtländer et al. 2010 a

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Contextual effects on health

- Impact of regional and neighbourhood deprivation on physical health in Germany: a multilevel study based on a linked SOEP and INKAR data set

“This study finds a significant association between area deprivation and physical health (...). [T]he association between neighbourhood deprivation and physical health can be partly explained by specific features of the neighbourhood environment.”

Voigtländer et al. 2010 b

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Explaining inequalities in regional distribution of health

- Merely aggregation of individual disadvantage?

Perhaps less well-off people remain in an area...

→ *Compositional effect (effect of population structure)*

- Causal effect of contextual factors?

Attributes of social and built environment act on health

→ *Contextual effect*

Would require experimental study randomly assigning people to regions with different degree of deprivation and observing them over time

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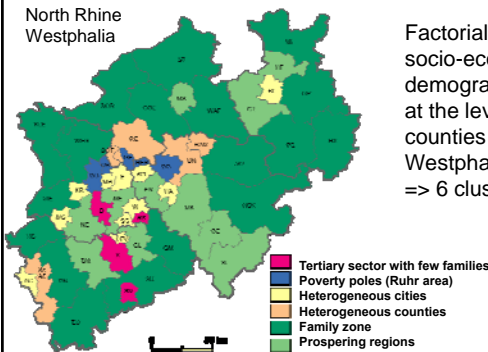
Assessing the effect of regional deprivation on mortality avoiding compositional bias: A natural experiment

Reiss K, Berger U, Winkler V, Voigtländer S, Becher H, Razum O
Journal of Epidemiology & Community Health (in press)

- Ethnic German resettlers (Aussiedler) migrated from former USSR to Germany since 1990
- Quasi-randomly distributed, *independent* of confounders, eg. socioeconomic status, health risk
- IPH Heidelberg AMOR cohort: follow-up of ~34,000 resettlers in NRW over ~10 years
- Participants linked to the 54 counties of NRW, aggregated in 6 deprivation clusters

Socio-regional clusters

North Rhine Westphalia



Factorial analysis of socio-economic and demographic variables at the level of the 54 counties of North Rhine Westphalia
=> 6 cluster types

Source: Strohmeier 1995; Strohmeier et al. 2007

Assessing the effect of regional deprivation on mortality

- Comparison of resettlers' mortality between clusters (*no difference expected* if only *compositional* effects at work)
- In fact: *highest* mortality in "Poverty poles" cluster
- Cox modelling with "Poverty poles" as reference:
 - **RR = 0.82** in "Prospering regions" cluster
 - **RR = 0.87** in "Family zone" cluster
- Study provides supporting evidence for a **causal effect of regional (contextual) factors** on health

Room for ideas and initiatives?

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Conclusions (1)

- Focus of attention on comparing socioeconomic and health status in East vs. West
- But: living conditions increasingly *diverge in the whole of Germany* at local-area level
- This contributes towards **health inequalities** apparently via *contextual effects*
- Selective migration (as in East=>West) likely to *compound* the situation via *compositional effects*
- Vicious circle of socioeconomic disadvantage and declining population health in affected regions?

Conclusions (2)

- Interventions to change *individual behaviour* (“Verhaltensprävention”) not sufficient
=> paradox effect of *increasing* inequalities
- Prevention needs to address *contextual factors* as well (“Verhältnisprävention”)
- Prerequisite for creating “room for peoples’ ideas and initiatives” (Köhler): reducing health inequalities
- Requires **targeted regional investments** in the provision of social goods (education, subsidized housing, employment, unemployment benefits, urban planning...)

Selected publications from the project

- Reiss K, Berger U (shared first authorship), Winkler V, Voigtländer S, Becher H, Razum O. Assessing the effect of regional deprivation on mortality avoiding compositional bias: A natural experiment *Journal of Epidemiology & Community Health* (in press)
- Razum O, Altenhöner T, Breckenkamp J, Voigtländer S. Social epidemiology after the German Reunification: East vs. West or Poor vs. Rich? *International Journal of Public Health* 2008; 53(1):13-22.
- Voigtländer S, Berger U, Razum O. The impact of regional and neighbourhood deprivation on physical health in Germany: a multilevel study. *BMC Public Health* 2010; 10(403).
- Voigtländer S, Berger U, Razum O. Zunehmende regionale Unterschiede bei den Lebensverhältnissen in Deutschland und ihre Bedeutung für die Erklärung gesundheitlicher Ungleichheit [Increasing Regional Disparities in Living Conditions in Germany and their Role in the Explanation of Health Inequalities]. *Gesundheitswesen* 2010; 72(5):301-308.
- Voigtländer S, Mielck A, Razum O. Die Bedeutung des kleinräumigen Kontexts für Gesundheit: Entwurf eines Erklärungsmodells [Impact of Small-Area Context on Health: Proposing a Conceptual Model.]. *Gesundheitswesen* (ahead of print).

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