How does South Africa, Russia and 19th Century Sweden compare? Points of departure …

- Transitions that are fundamental and rapid have immediate, profound effects on health.
  
- Changes in the labour market, social structure and social security systems put a heavy burden on people’s occupational flexibility, social adaptability, and ability to find economic safety for themselves and their families.
  
- In times of rapid change, old rules, norms, and institutions no longer function as efficiently as they did before.
  
- If social and geographical mobility increases, some people benefit while others lose out.
Health and Social Change

How does South Africa, Russia and 19th Century Sweden compare?

Points of departure …

- Welfare and health also depend on gender, age, and social class.

- Cultural and gender factors within a particular epidemiological setting often have different effects on the health of men and women.

- The negative effects, even when change is positive in the long run, can be summarized as “social stress”.
Health and Social Change

How does South Africa, Russia and 19th Century Sweden compare?
Points of departure …

• The impact of change is always filtered through formal and informal institutions.

• “Social capital” is one factor that determines who will become winners and losers.

• Public institutions can distribute and redistribute material resources, welfare, and social capital.

• Informal institutions - such as voluntary associations, social networks in the workplace or among neighbours, the family, and other primary groups - and the way civil society functions can enhance social capital and are essential for social stability and security.
# Facts and trends 1

<table>
<thead>
<tr>
<th>Factor</th>
<th>19th C. Sweden</th>
<th>Russia</th>
<th>RSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political change</td>
<td>Moderate</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Economic &amp; Social Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in production</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Changes in agriculture</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>De-industrialization</td>
<td>No industrialisation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Employment crisis</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pauperization</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Increased inequality</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Welfare provision crisis</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Demographic Change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population size</td>
<td>Up</td>
<td>Stable-&gt;down?</td>
<td>Stable-&gt;down?</td>
</tr>
<tr>
<td>Migration to cities</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Infant &amp; child mortality</td>
<td>Down</td>
<td>Stable?</td>
<td>Up</td>
</tr>
<tr>
<td>Adult female mortality</td>
<td>Down</td>
<td>Slightly up</td>
<td>Up</td>
</tr>
<tr>
<td>Adult male mortality</td>
<td>Up</td>
<td>Up</td>
<td>Up</td>
</tr>
<tr>
<td>Family/household structure</td>
<td>Crisis</td>
<td>Crisis</td>
<td>Crisis</td>
</tr>
<tr>
<td>Epidemiological change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STD’s/HIV</td>
<td>STD’s high</td>
<td>HIV up</td>
<td>HIV up</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>High</td>
<td>Up?</td>
<td>High&gt;up</td>
</tr>
<tr>
<td>Other infectious diseases</td>
<td>High&gt;down</td>
<td>Low&gt;up?</td>
<td>High&gt;?</td>
</tr>
</tbody>
</table>
## Facts and trends 2

<table>
<thead>
<tr>
<th>Factor</th>
<th>19th C. Sweden</th>
<th>Russia</th>
<th>RSA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health differentials</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By gender</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes?</td>
</tr>
<tr>
<td>By marital status</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes?</td>
</tr>
<tr>
<td>By class/ethnicity/&quot;race&quot;</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>By region</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Urban/rural</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Socio-cultural change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uprooted societies</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Norm crisis</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Social losers`</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Abuse of alcohol and drugs</td>
<td>Up</td>
<td>Up</td>
<td>Up</td>
</tr>
<tr>
<td>Violence</td>
<td>Up</td>
<td>Up</td>
<td>Up</td>
</tr>
<tr>
<td>Juvenile delinquency</td>
<td>Up</td>
<td>Up</td>
<td>Up</td>
</tr>
<tr>
<td>Other crimes</td>
<td>Up</td>
<td>Up</td>
<td>Up</td>
</tr>
</tbody>
</table>
How does South Africa, Russia and 19th Century Sweden compare?

Fig 1. Social structure of the agricultural population. Sweden 1751 and 1850. Number of male heads of household.
Health and Social Change

How does South Africa, Russia and 19th Century Sweden compare?

Sweden early 19th century

* Cities
  * In-migration
  * Pauperisation
  * High average age of marriage among the poor
    * High illegitimacy rate
  * High male mortality
  * Uprootedness
  * Class divisions
  * Social conflict
  * Old rules do not work
  * Drunkenness among men
  * Crime increases — violence and theft
Health and Social Change

*How does South Africa, Russia and 19th Century Sweden compare?*

Why infant and child mortality down?

* Functioning local communities
* Breast feeding campaigns
* Better child care
* Smallpox vaccination
* Small - important hygienic measures in cities
* Synergy effects increases resistance
* Trained midwives – lower maternal mortality
* Healthy children means healthier adults
Health and Social Change
How does South Africa, Russia and 19th Century Sweden compare?

19th c. Sweden
Female adult mortality declines, male adult mortality reacts negatively
**19th c. Sweden**

Female adult mortality declines, male adult mortality reacts negatively

---

**Fig 3b. Sex differences for selected causes of death, 25-49 years of age. Sweden 1776-80 and 1826-30**

- **Tuberc.**
- **Infect.**
- **Stroke**
- **External**
- **Maternal**
- **Other**

<table>
<thead>
<tr>
<th>Cause</th>
<th>1776-80</th>
<th>1826-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infect.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>External</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
19th c. Sweden
Alcohol – the painkiller
Men’s gender roles make them vulnerable

Fig 4. Acute alcohol intoxication (deaths or autopsies) per 1,000000
1804-1870.
Health and social Change – Sweden c. 1800-1850.

PLAGUE

EC = economic capital
CC = cultural capital
SC = social capital

DEMOGRAPHIC GROWTH AMONG CHILDREN AND WOMEN

AGRICULTURAL CHANGE

UNEMPLOYMENT POVERTY

UPROOTED CITIZENS

UNSTABLE HOUSEHOLDS

ALCOHOL VIOLENCE THEFTS

MIGRATION

HEALTH

PLAQUE

DEMOGRAPHIC GROWTH AMONG CHILDREN AND WOMEN

HEALTH

PLAQUE

DEMOGRAPHIC GROWTH AMONG CHILDREN AND WOMEN

HEALTH

PLAQUE

DEMOGRAPHIC GROWTH AMONG CHILDREN AND WOMEN

HEALTH

PLAQUE

DEMOGRAPHIC GROWTH AMONG CHILDREN AND WOMEN

HEALTH
Long term trends in life expectancy at birth since 1890: France, Japan, Russia and the USA.

Historical gap, its reduction in the 1950s and the new health crisis in 1965-2000
HSC – Week 3
Russia 1970 - 2000

Life expectancy in years

UK
Hungary
Poland
Estonia
Russia

Year

Variation in the life expectancy decrease for men across regions of European Russia

Walberg et al., 1998

Table 5  Multivariate analysis of association with fall in male life expectancy at birth, Russia, 1990-4

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cumulative adjusted $\hat{r}$</th>
<th>Adjusted $\beta$ (SE)</th>
<th>Univariate $\beta$ (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour turnover</td>
<td>0.423</td>
<td>0.147 (0.030)***</td>
<td>0.183 (0.029)***</td>
</tr>
<tr>
<td>Crime increase (%)</td>
<td>0.514</td>
<td>0.029 (0.010)**</td>
<td>0.039 (0.014)**</td>
</tr>
<tr>
<td>Mean household income (roubles) 1990</td>
<td>0.558</td>
<td>0.019 (0.008)*</td>
<td>0.041 (0.01)**</td>
</tr>
</tbody>
</table>

*P<0.05; **P<0.01; ***P<0.001.

Table 6  Multivariate analysis of association with fall in male life expectancy at birth, Russia, 1990-4, excluding crime variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cumulative adjusted $\hat{r}$</th>
<th>Adjusted $\beta$ (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labour turnover (job gains and losses/average employment) in large and medium enterprises</td>
<td>0.423</td>
<td>0.153 (0.029)***</td>
</tr>
<tr>
<td>Robin Hood index</td>
<td>0.499</td>
<td>-0.376 (0.118)**</td>
</tr>
<tr>
<td>Mean household income (roubles) in 1990</td>
<td>0.557</td>
<td>0.023 (0.008)**</td>
</tr>
</tbody>
</table>

**P<0.01; ***P<0.001.

Associations with the pace of economic reform, psychosocial stress, and social cohesion are detected.
Russia

Male surplus mortality by age

Males, total difference = 14.6 years

Age

Contribution in years

External
Ill-defined
Other
Digestive
Respiratory
Circulatory
Neoplasms
Infectious

Russia

Male surplus mortality by age

Males, total difference = 14.6 years

Age

Contribution in years

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Ill-defined
Other
Digestive
Respiratory
Circulatory
Neoplasms
Infectious

Russia

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Circulatory
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Infectious

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Age

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Other
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Respiratory
Circulatory
Neoplasms
Infectious

Russia

Male surplus mortality by age

Males, total difference = 14.6 years

Age

Contribution in years

External
Ill-defined
Other
Digestive
Respiratory
Circulatory
Neoplasms
Infectious

Russia

Male surplus mortality by age

Males, total difference = 14.6 years

Age

Contribution in years

External
Ill-defined
Other
Digestive
Respiratory
Circulatory
Neoplasms
Infectious
Russia

Female surplus mortality by age

Females, total difference = 7.0 years

Contribution in years

Age
Russia
Proportional differences in age specific death rates between the lower* and the upper educational groups by cause of death, 1989

Clear similarity with the Russia-West gap for total populations

Shkolnikov et al, 1998
Injuries, poisoning and violence mortality
(excluding acute alcohol poisoning)
Men aged 30-59

“Coronary heart disease” and acute alcohol poisoning mortality in Russia

Men aged 30-59
## South Africa

Age standardised death rates (per 1 000) by province – year 2000 estimate

*The legacy of apartheid and HIV/AIDS*

<table>
<thead>
<tr>
<th>Province</th>
<th>Male Rate</th>
<th>Index</th>
<th>Female Rate</th>
<th>Index</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>KwaZulu Natal</td>
<td>20.51</td>
<td>141</td>
<td>15.49</td>
<td>165</td>
<td>(1)</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>20.02</td>
<td></td>
<td>14.76</td>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>Free State</td>
<td>18.56</td>
<td></td>
<td>13.34</td>
<td></td>
<td>(3)</td>
</tr>
<tr>
<td>North West</td>
<td>18.28</td>
<td></td>
<td>13.08</td>
<td></td>
<td>(4)</td>
</tr>
<tr>
<td>Eastern Cape</td>
<td>17.90</td>
<td></td>
<td>12.83</td>
<td></td>
<td>(5)</td>
</tr>
<tr>
<td>Limpopo</td>
<td>17.84</td>
<td></td>
<td>12.68</td>
<td></td>
<td>(6)</td>
</tr>
<tr>
<td>Gauteng</td>
<td>17.03</td>
<td></td>
<td>11.94</td>
<td></td>
<td>(7)</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>15.84</td>
<td></td>
<td>10.82</td>
<td></td>
<td>(8)</td>
</tr>
<tr>
<td>Western Cape</td>
<td>14.45</td>
<td>100</td>
<td>9.46</td>
<td>100</td>
<td>(9)</td>
</tr>
<tr>
<td>National</td>
<td>1831</td>
<td>127</td>
<td>1303</td>
<td>125</td>
<td></td>
</tr>
</tbody>
</table>

**Factors:** Urban/rural; Poor/”rich”

HIV, external causes
CHD, obesity
The unfinished Epid. revolution + the new diseases
South Africa – external causes of death

- Homicide (n=6963)
- Suicide (n=1430)
- Accident (n=5219)

- Male (n=13556)
- Female (n=30)
South Africa

Non-communicable age standardised deaths per 100 000 in 2001

*Cape Town districts*
## South Africa – Death profile

**Khayelitsha, Cape Town**

### Top causes of death (%)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Homicide 27.7</td>
<td>1. HIV/AIDS 22.9</td>
</tr>
<tr>
<td>2.</td>
<td>TB 13.5</td>
<td>2. TB 14.6</td>
</tr>
<tr>
<td>3.</td>
<td>Traffic accidents 9.9</td>
<td>3. Lower respiratory 4.2</td>
</tr>
<tr>
<td>4.</td>
<td>Lower respiratory 4.2</td>
<td>4. Hypertensive ... 5.8</td>
</tr>
<tr>
<td>5.</td>
<td>Hypertensive heart 3.1</td>
<td>5. Homicide 4.9</td>
</tr>
<tr>
<td>6.</td>
<td>Fires 2.9</td>
<td>6. Diarrhoeal disease 3.5</td>
</tr>
<tr>
<td>7.</td>
<td>Renal failure 2.2</td>
<td>7. Traffic accidents 3.1</td>
</tr>
<tr>
<td>8.</td>
<td>Suicide &amp; self-inflicted 2.0</td>
<td>8. Stroke 2.7</td>
</tr>
</tbody>
</table>

**Sum 1-8:**

- **Men:** 65.6 %
- **Women:** 61.7 %
Males aged 15-39 experienced the highest mortality caused by unnatural causes.

Females in the same age group died primarily as a result of HIV/AIDS.

For young children, intestinal infections is still one of the leading causes of death but declining over time.

Influenza and pneumonia are other leading causes of death for children.

In SA, there is a unique racial topology of mortality.

- Black African and Coloured males - unspecified unnatural causes and TB
- Indian and White males – ischaemic heart disease and unspecified natural causes
- Black African females – HIV/AIDS
- Coloured females – Cerebrovascular diseases
- Indian and White females – ischaemic heart disease
Health, capital and social change: Russia - RSA

EC = economic capital
CC = cultural capital
SC = social capital

Political change

GLOBALISATION

ECONOMIC CHANGE

DE-INDUSTRIALISATION
REGRESSION
IN COUNTRYSIDE
UNEMPLOYMENT
POVERTY
WEAK HOUSEHOLDS

HIV

HEALTH

EC

CC

SC

UPROOTED CITIZENS

MIGRATION

UNSTABLE SOCIETIES

DRUG ABUSE
VIOLENCE
CRIME

UNSTABLE SOCIETIES

UPROOTED CITIZENS

MIGRATION

UNSTABLE SOCIETIES

DRUG ABUSE
VIOLENCE
CRIME
Challenges of Change
Mending the weak society – weak community model

- PLAGUE
- WAR
- HUNGER
- POLITICAL INSTITUTIONS
- FRIENDS, NEIGHBOURS, KIN, ETC.
- HOUSEHOLD AND FAMILY
- INDIVIDUAL
What turn the tide in Sweden (Western Europe) from c. 1870 onwards? Should/could it be repeated?

Hygienism – cleaning cities
• The epidemiological revolution
• Stable work
• Stable family structures
• Industrial work discipline
• the role of local institutions
• Workers discipline themselves by:
  • Voluntary associations
  • Free churches
  • Temperance movements
  • Trade unions
  • Political parties
• Democracy for men 1906
• and for women 1919 (!)
• Institutions for social safety
• I. e. tools for the people to interpret and handle the new society
Towards the welfare society