Individual differences will explain who falls, but the height of the hurdles will explain how many fall.
Walker, R. et al.
Poverty in global perspective.
Status differentiation effects cognitive performance

The Effect of Caste Identity on Children's Performance

The bar chart shows the number of mazes solved by children with high and low caste identity, both when caste was unannounced and when it was announced.

Life expectancy in rich countries is no longer related to National Income per head
Life expectancy is strongly related to income *within* rich countries.
Social hierarchy in non-human primates

Robert Sapolsky studies baboons in the wild

Carol Shively studies macaques in captivity
Inequality...
How much richer are the richest 20% in each country than the poorest 20%?

Income gaps
How many times richer are the richest fifth than the poorest fifth?

<table>
<thead>
<tr>
<th>Country</th>
<th>Income Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>3.4</td>
</tr>
<tr>
<td>Finland</td>
<td>3.7</td>
</tr>
<tr>
<td>Norway</td>
<td>3.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>4.0</td>
</tr>
<tr>
<td>Denmark</td>
<td>4.3</td>
</tr>
<tr>
<td>Belgium</td>
<td>4.6</td>
</tr>
<tr>
<td>Austria</td>
<td>4.8</td>
</tr>
<tr>
<td>Germany</td>
<td>5.2</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5.3</td>
</tr>
<tr>
<td>Spain</td>
<td>5.6</td>
</tr>
<tr>
<td>France</td>
<td>5.6</td>
</tr>
<tr>
<td>Canada</td>
<td>5.6</td>
</tr>
<tr>
<td>Switzerland</td>
<td>5.7</td>
</tr>
<tr>
<td>Ireland</td>
<td>6.1</td>
</tr>
<tr>
<td>Greece</td>
<td>6.2</td>
</tr>
<tr>
<td>Italy</td>
<td>6.7</td>
</tr>
<tr>
<td>Israel</td>
<td>6.8</td>
</tr>
<tr>
<td>New Zealand</td>
<td>6.8</td>
</tr>
<tr>
<td>Australia</td>
<td>7.0</td>
</tr>
<tr>
<td>UK</td>
<td>7.2</td>
</tr>
<tr>
<td>Portugal</td>
<td>8.0</td>
</tr>
<tr>
<td>USA</td>
<td>8.5</td>
</tr>
<tr>
<td>Singapore</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Wilkinson & Pickett, The Spirit Level
www.equalitytrust.org.uk
Health and social problems are worse in more unequal countries

Index of:
- Life expectancy
- Math & Literacy
- Infant mortality
- Homicides
- Imprisonment
- Teenage births
- Trust
- Obesity
- Mental illness – incl. drug & alcohol addiction
- Social mobility
Child Wellbeing is lower in more unequal countries

Death rates of men 25-64yrs & income inequality
US states and Canadian provinces

Mental illness is more common in more unequal societies

Wilkinson & Pickett, The Spirit Level
Imprisonment rates are higher in more unequal countries

Wilkinson & Pickett, The Spirit Level

www.equalitytrust.org.uk
The Relationship between Income Inequality and Social Mobility

Around the world, high income inequality is associated with low social mobility.

Data from Corak (2013), World Bank (2013)
Participation in local groups and voluntary organisations is lower in more unequal societies.

People in more unequal countries trust each other less

Wilkinson & Pickett, The Spirit Level
Homicide rates are higher in more unequal US states and Canadian provinces.

Cuernavaca, Mexico
‘Armed Response’ - Pretoria, South Africa.
Societies with wider income differences need more “guard labor”

The proportion of ‘guard’ labor grew with inequality.
USA 1979-2000

Vertical axis: number of protective services employees per 10,000 workers in 2000.

Greater inequality

Inequality (Gini)
Bigger material differences create bigger social distances and increase social class differentiation
Literacy Scores of 16-25 year olds by Parents' Education

Self-reported prevalence of illness by education

Source: Banks et al. JAMA 2006; 295: 2037-2045
The benefits of greater equality are not confined to the poor but extend to all social classes

Infant mortality by class: Sweden compared with England & Wales

What kind of stress cause the biggest rise in stress hormones?

![Bar chart showing cortisol response for tasks with 'social evaluative threat' (uncontrollable) and other tasks.](chart.png)

Findings:-

- Anxiety and depression are related to subordination, to submissiveness and to the desire to avoid subordination.

- Mania and narcissistic traits are related to inflated self-perceptions of power.

- Externalizing disorders, mania proneness, and narcissistic traits are related to heightened dominance motivation and behaviour.
Depression is more common in more unequal states

Income inequality and schizophrenia

Self enhancement increases in more unequal societies

Two recent studies show that inequality increases conspicuous consumption and consumerism

- People in more unequal areas of the USA are more likely to buy high status cars

- Data from internet searches shows that people in more unequal states are more likely to search for status goods
Gains of the past are being undone

Taylor-Robinson D, Whitehead M, Barr B. BMJ 2015
Changes in death rates of pensioners aged over 85 by local authority 2011-12

Fig 1 Infant mortality rate (95% confidence interval) by socioeconomic classification, 2008-15.

NS-SEC group
- Manual (≥5)
- Intermediate (3, 4)
- Professional (1, 1.1, 1.2, 2)

David Taylor-Robinson, and Ben Barr BMJ
2017;357:bmj.j2258

©2017 by British Medical Journal Publishing Group
Trends in Income inequality
Gini and 90:10 ratio. Institute For Fiscal Studies, BHC, GB.

Percent of all income going to top 1% 1930-2014

Source: World Top Incomes Database
Trade Unions membership (% workforce) and Share of Income going to top 10% (USA, 1918-2008)

Changing ratio of CEO pay to average pay of production & non-supervisory workers in top 350 US companies

Between 1979-2007 the income of the:-
- Top 0.1% increased by 362%
- Top 1% increased by 156%
- Bottom 90% increased by 17%
Companies paying CEOs above the median performed less well than those paying below the median.

What can be done?

**Income differences before tax**
- Increase economic democracy - employee ownership etc
- Strengthen trade unions

**Taxes & benefits**
- Stop tax avoidance
- End tax havens
- Make taxation progressive again
Economic democracy:-

• “turns companies from being pieces of property into communities”
• reduces pay ratios within companies
• transforms the experience of work
• redistributes wealth & reduces unearned income
• improves productivity
• makes companies more environmentally & socially responsible

Boards can include employee, community and consumer representatives
Employee Ownership Association

The voice of co-owned business

2012 International Year of Cooperatives

-owned!

Employee Ownership

Top 100

Owned & Operated

by our Employees

Fresh Ground Coffee

Mondragon

Finanztza

Industry

Knowledge

Tullis Russell

PAPERMAKERS

Humanity at Work

The Phone Co-op

your voice counts

John Lewis

Cafédirect

MEDIUM ROAST

100% ARABICA

Made the small way

Smooth and balanced
& always direct from the

The Effects of Income inequality

Evidence of Causality

Theory & Psychosocial Processes

Creating the Society We Want
OUT OF BALANCE

A Harvard business prof and a behavioral economist recently asked more than 5,000 Americans how they thought wealth is distributed in the United States. Most thought that it’s more balanced than it actually is. Asked to choose their ideal distribution of wealth, 92% picked one that was even more equitable.

Source: Michael I. Norton, Harvard Business School; Dan Ariely, Duke University
Local Authority Budget cuts 2010-11 to 2014-15 and premature mortality

Taylor-Robinson D et al. BMJ 2013; 347: bmj.f4208
Life expectancy is worse where health inequalities are larger.

The index of health inequality measures the proportion of illness that correlates with income status. Source: Hertzman C. *American Scientist*, 2001; 89 (6): 538-45
Health inequalities are larger where income differences are larger

Social hierarchy in non-human primates

Robert Sapolsky studies baboons in the wild

Carol Shively studies macaques in captivity
Plasma fibrinogen by employment grade among Civil Servants, Whitehall II.

(Adjusted for age, ethnic origin and women’s menopausal status)

Women’s preference for more masculinized faces is stronger in more unequal societies

Psychosocial risk factors for ill health

- Low social status
- Weak social connections
- Stress in early life (pre- & post-natal)
The Jekyll & Hyde of Public Health?

- **Social status** (dominance hierarchies, pecking orders) are orderings based on power, coercion and privileged access to resources – regardless of the needs of others.

- **Friendship** in contrast, is based on reciprocity, mutuality, social obligations, sharing and a recognition of each other’s needs.
Companion
Spanish: Compañero;
French: Copain

from the Latin “Con” (with)
and “Pan” (bread)
- someone with whom you eat bread
“Gifts make friends and friends make gifts”

Brands owned by the ‘big ten’ food multinationals
Inequality and mortality over time: multilevel cohort studies

<table>
<thead>
<tr>
<th>Cohort study</th>
<th>Weight (%)</th>
<th>Relative risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark, CCHS/CPS 1976-8&lt;sup&gt;W1&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>5.45</td>
<td>1.01 (0.99 to 1.02)</td>
</tr>
<tr>
<td>Female</td>
<td>5.17</td>
<td>1.01 (0.98 to 1.03)</td>
</tr>
<tr>
<td>Finland, Census 1990&lt;sup&gt;W2&lt;/sup&gt;</td>
<td>5.09</td>
<td>1.02 (0.99 to 1.04)</td>
</tr>
<tr>
<td>Norway, Census 1980-2002&lt;sup&gt;W3&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male age 30-39</td>
<td>5.06</td>
<td>1.17 (1.14 to 1.20)</td>
</tr>
<tr>
<td>Male age 40-49</td>
<td>5.28</td>
<td>1.13 (1.10 to 1.15)</td>
</tr>
<tr>
<td>Male age 50-59</td>
<td>5.45</td>
<td>1.10 (1.08 to 1.11)</td>
</tr>
<tr>
<td>Male age 60-69</td>
<td>5.55</td>
<td>1.07 (1.07 to 1.08)</td>
</tr>
<tr>
<td>Male age 70-79</td>
<td>5.58</td>
<td>1.06 (1.05 to 1.06)</td>
</tr>
<tr>
<td>Female age 30-39</td>
<td>4.46</td>
<td>1.20 (1.15 to 1.25)</td>
</tr>
<tr>
<td>Female age 40-49</td>
<td>5.00</td>
<td>1.16 (1.13 to 1.20)</td>
</tr>
<tr>
<td>Female age 50-59</td>
<td>5.30</td>
<td>1.12 (1.10 to 1.14)</td>
</tr>
<tr>
<td>Female age 60-69</td>
<td>5.48</td>
<td>1.11 (1.10 to 1.12)</td>
</tr>
<tr>
<td>Female age 70-79</td>
<td>5.56</td>
<td>1.06 (1.05 to 1.07)</td>
</tr>
<tr>
<td>New Zealand, Census 1991&lt;sup&gt;W4&lt;/sup&gt;</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>2.49</td>
<td>1.10 (1.01 to 1.20)</td>
</tr>
<tr>
<td>Female</td>
<td>2.46</td>
<td>1.04 (0.95 to 1.13)</td>
</tr>
<tr>
<td>Sweden, Census 1990&lt;sup&gt;W5&lt;/sup&gt;</td>
<td>4.13</td>
<td>1.02 (0.98 to 1.07)</td>
</tr>
<tr>
<td>Sweden, SLC 1980-6&lt;sup&gt;W6&lt;/sup&gt;</td>
<td>0.42</td>
<td>1.17 (0.89 to 1.53)</td>
</tr>
<tr>
<td>US, NHEFS 1971-5&lt;sup&gt;W7&lt;/sup&gt;</td>
<td>1.50</td>
<td>1.10 (0.97 to 1.25)</td>
</tr>
<tr>
<td>US, NHIS 1987-94&lt;sup&gt;W8&lt;/sup&gt;</td>
<td>5.57</td>
<td>1.01 (1.01 to 1.02)</td>
</tr>
<tr>
<td>US, NLMS 1979-85&lt;sup&gt;W9&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male age 25-64</td>
<td>3.65</td>
<td>1.19 (1.13 to 1.26)</td>
</tr>
<tr>
<td>Female age 25-64</td>
<td>3.70</td>
<td>1.07 (1.01 to 1.13)</td>
</tr>
<tr>
<td>Male age ≥65</td>
<td>3.44</td>
<td>1.02 (0.96 to 1.08)</td>
</tr>
<tr>
<td>Female age ≥65</td>
<td>4.20</td>
<td>0.99 (0.95 to 1.04)</td>
</tr>
<tr>
<td>Combined</td>
<td>100.00</td>
<td>1.08 (1.06 to 1.10)</td>
</tr>
</tbody>
</table>

I<sup>2</sup> = 96% (95% CI 95% to 97%), heterogeneity P=0.000

Kondo et al, BMJ, 2009; 339: b4471
Time lags between changes in inequality and changes in health


Charles Cooley (1864-1929)

‘Many people of balanced mind and congenial activity scarcely know that they care what others think of them, and will deny, perhaps with indignation, that such care is an important factor in what they are and do. But this is an illusion. If failure or disgrace arrives, if one suddenly finds that the faces of men show coldness or contempt instead of the kindliness and deference that he is used to, he will perceive from the shock, the fear, the sense of being outcast and helpless, that he was living in the minds of others without knowing it, just as we daily walk the solid ground without thinking how it bears us up.’

*Human Nature and the Social Order*. 1902, p.207
“(My parents) put…down…most of their imagined shortcomings to their not having been educated, education (was) to them a passport to everything they lacked: self-confidence, social ease and above all the ability to be like other people.

Put simply and as they themselves would have put it, both my parents were shy, a shortcoming they thought of as an affliction while at the same time enshrining it as a virtue. I assured them, falsely, that everybody felt much as they did but that social ease was something that could and should be faked.

‘Well, you can do that,’ Dad would say, ‘you've been educated,’ adding how often he felt he had nothing to contribute. ‘I'm boring, I think. I can't understand why anybody likes us. I wonder sometimes whether they do, really.’
School bullying is much more common in countries with bigger income differences. 11-year-olds in 37 countries ($r = .62$)

Teenage Birth Rates are Higher in More Unequal Rich Countries

Rank total shareholder return in relation to CEO pay rank among Australia’s largest 200 companies

Credit Lyonnais Securities Asia. Bloomberg Businessweek