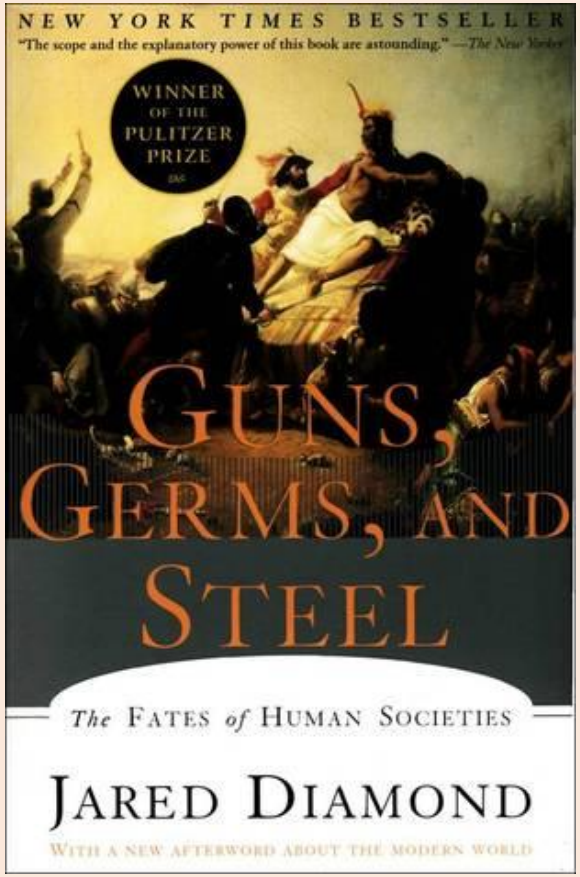
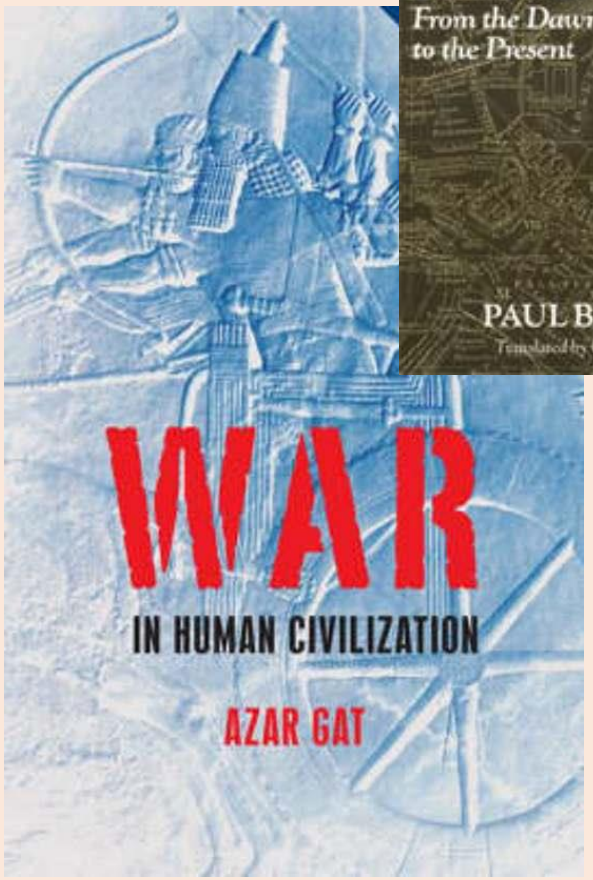
COEN TEULINGS
Utrecht University

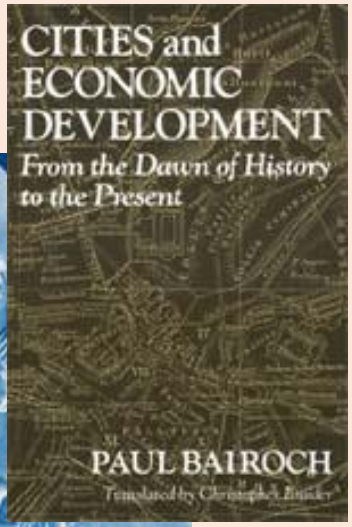
Regularities in history: What explains them?

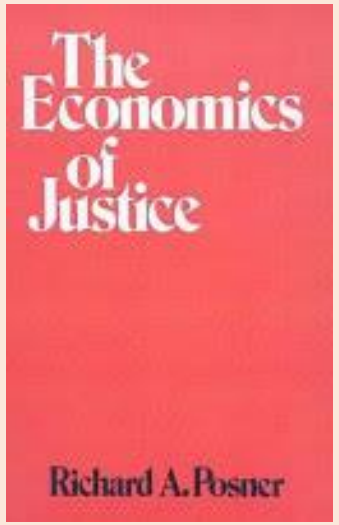
"Big History" lecture
Amsterdam
May 8, 2018

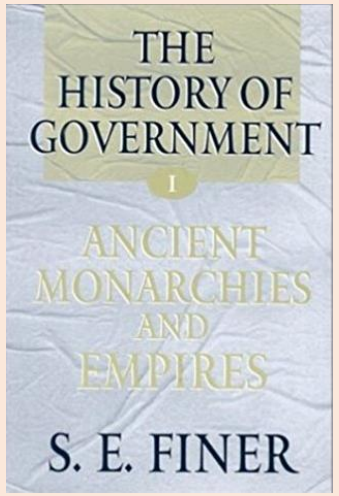
Major sources of inspiration





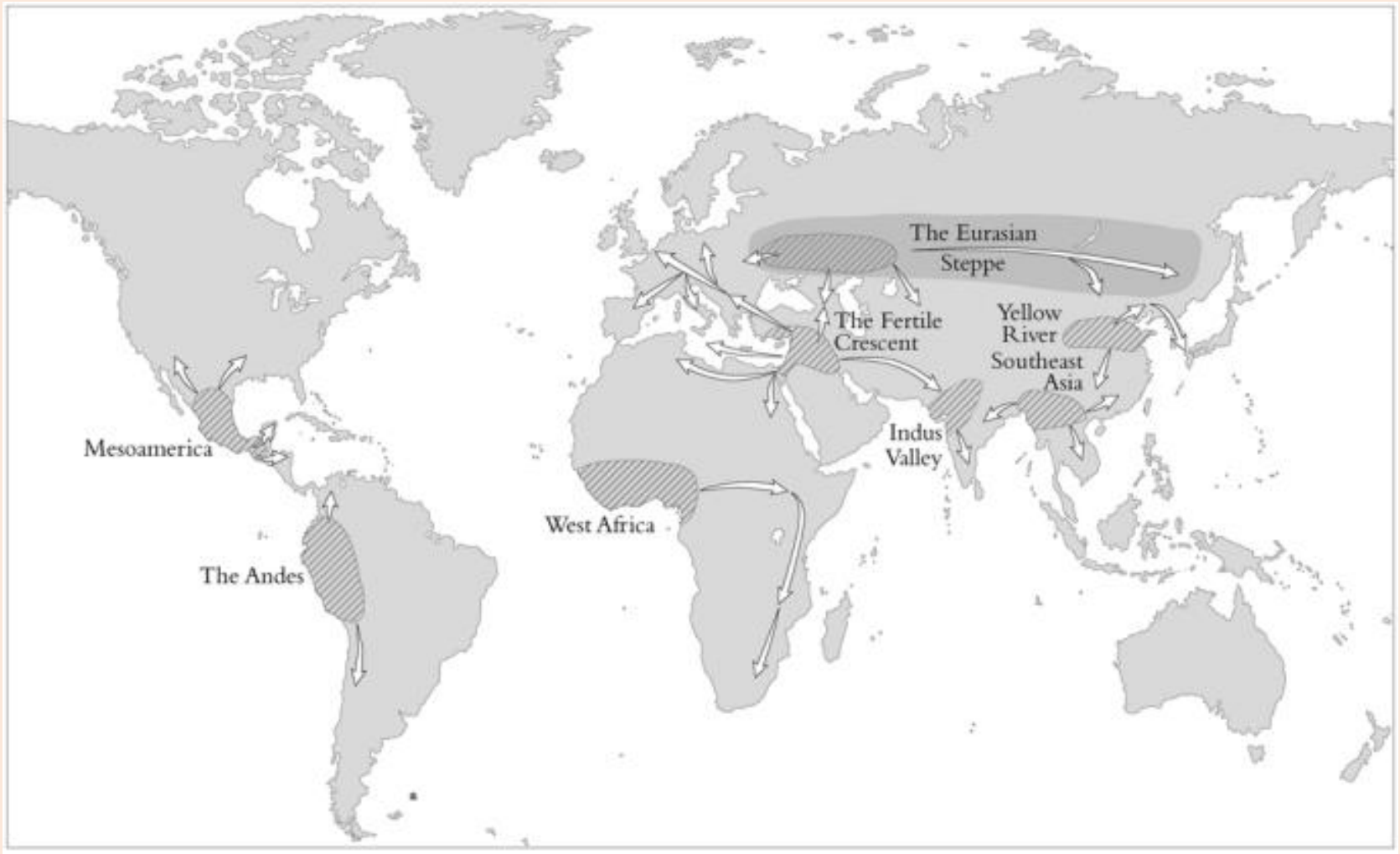






Neolithic revolutions

Diamond (1997) / Gat (2006)



Does history satisfy laws?

- Battle of Cajamarca, 1532
- Why did Europe win?
- … many similar occasions
- … in particular in Polynesia
- Multiple dates of starting of agriculture
  - natural experiments
  - Bering Street crossing as prime example
- If there are laws, which are these laws?

Neolithic revolution

- 100 x increase population density
  - 10 x lower distance to neighbourghs
- Cities possible: transport of food
- Coordination of violence much more easy
- Politics / hierarchy
- Sovereign
  - expropriates its subjects (taxation)
  - protects against outside expropriation
- Income inequality

Papoea battlefield

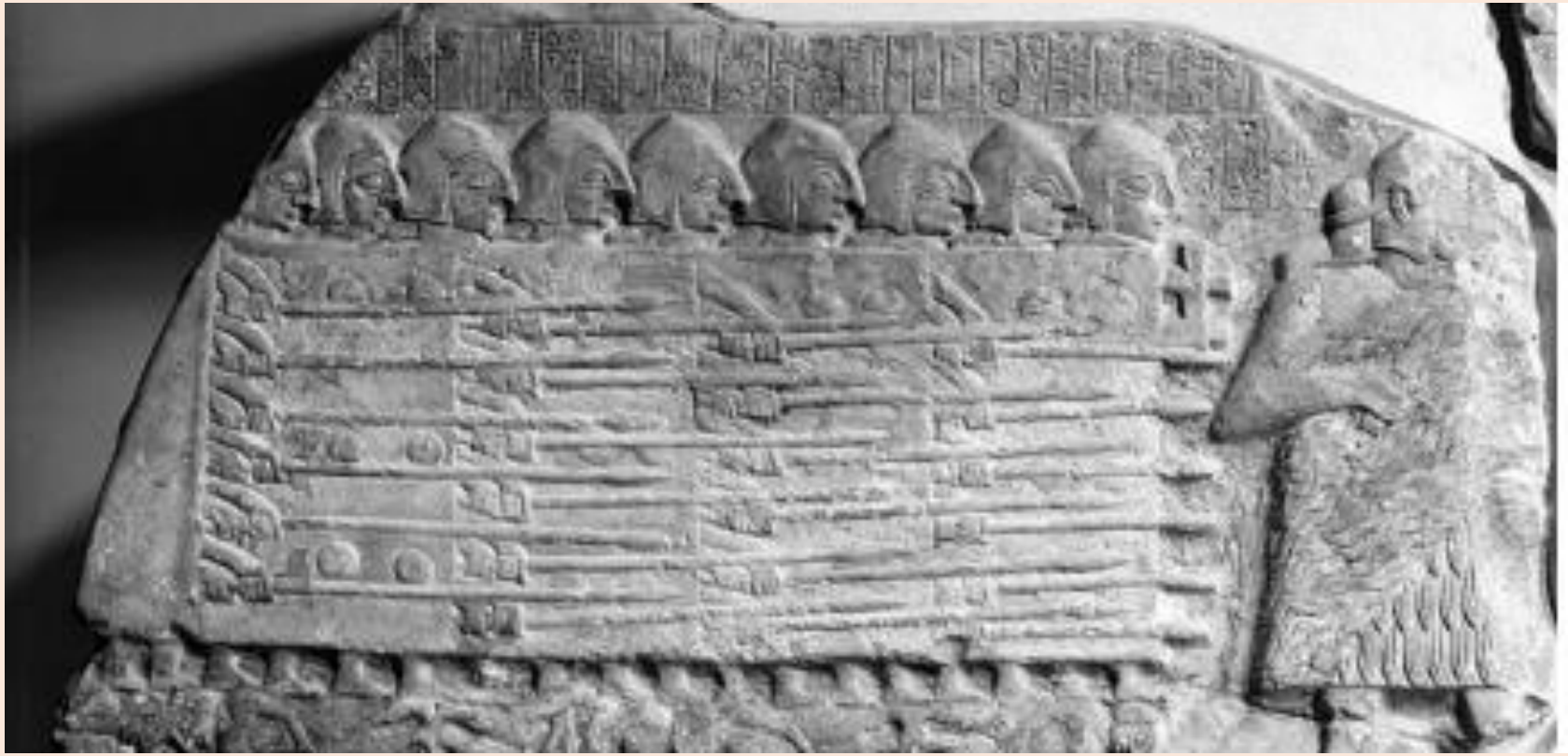
A. Gat (2006)

Cities and fortications as protection

A. Gat (2006)

Coordination of violence

Gat (2006)



Forms of polity

Diamond (1997)

	Band	*Tribe*	*Chiefdom*	*State*
Membership				
Number of people	dozens	hundreds	thousands	over 50,000
Settlement pattern	nomadic	fixed: 1 village	fixed: 1 or more villages	fixed: many villages and cities
Basis of relationships	kin	kin-based clans	class and residence	class and residence
Ethnicities and languages	1	1	1	1 or more
Government				
Decision making, leadership	"egalitarian"	"egalitarian" or big-man	centralized, hereditary	centralized
Bureaucracy	none	none	none, or 1 or 2 levels	many levels
Monopoly of force and information	no	no	yes	yes
Conflict resolution	informal	informal	centralized	laws, judges
Hierarchy of settlement	no	no	no→paramount village	capital

	Band	*Tribe*	*Chiefdom*	*State*
Religion				
Justifies kleptocracy?	no	no	yes	yes→no
Economy				
Food production	no	no→yes	yes→intensive	intensive
Division of labor	no	no	no→yes	yes
Exchanges	reciprocal	reciprocal	redistributive ("tribute")	redistributive ("taxes")
Control of land	band	clan	chief	various
Society				
Stratified	no	no	yes, by kin	yes, not by kin
Slavery	no	no	small-scale	large-scale
Luxury goods for elite	no	no	yes	yes
Public architecture	no	no	no→yes	yes
Indigenous literacy	no	no	no	often

Laws of history: what determines growth?

1. Time
2. Scale
3. Resources

Access to global market provides an alternative: import of resources and technology

- North & South Korea
- East & West Berlin
- Turkish & Greek Cyprus

Some economic concepts

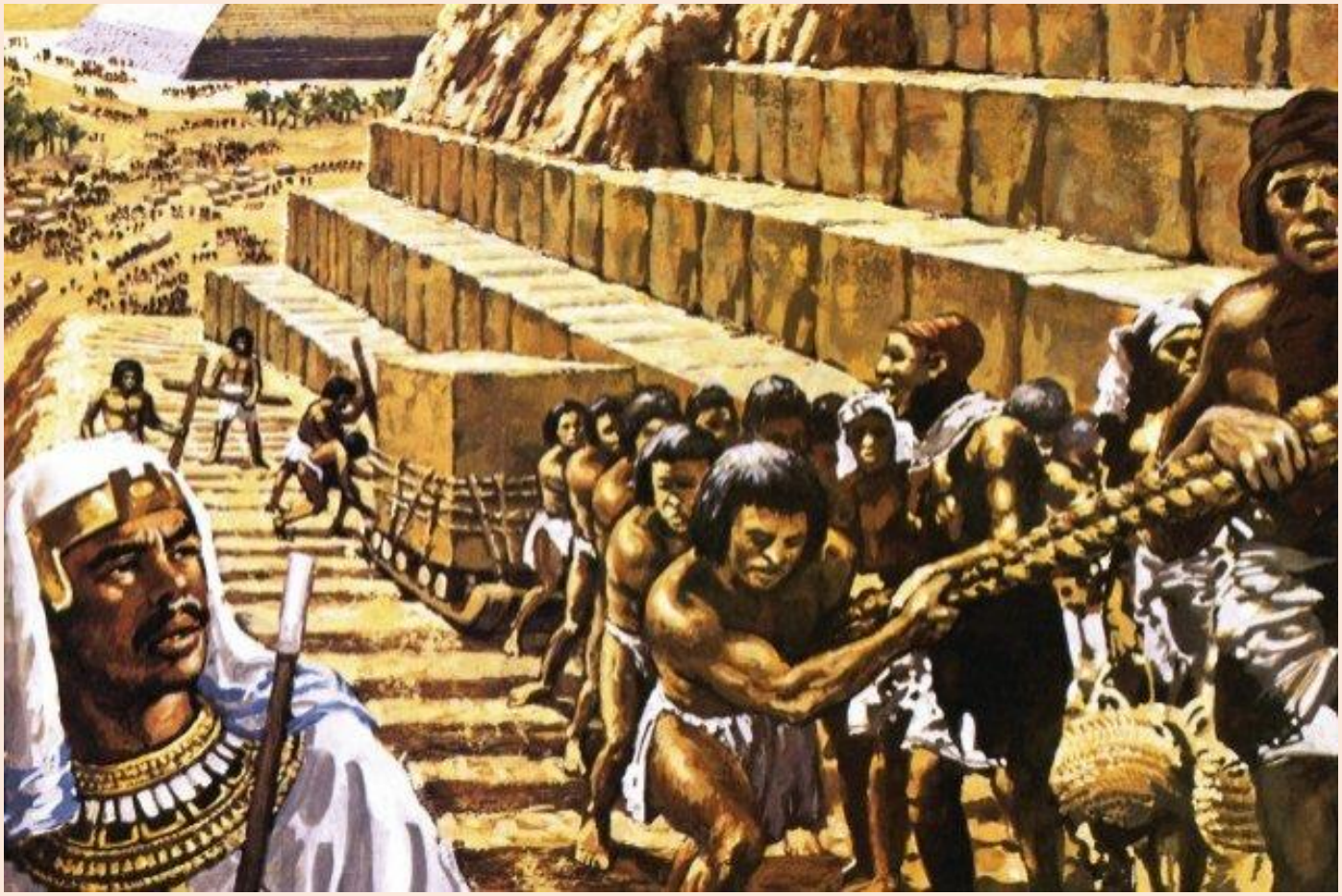
- Market yields first best
  - Mechanism: transactions
- Requirements
  - Complete markets
  - Established property rights
- Disruption: missing market = externality
  - Why? transaction cost (e.g. debt repayment)
- Whenever a market is missing
  - Design an institution (e.g. cadastre, *immobilier*)
- Protect property rights?
  - Institution: state monopoly of violence

3 major institutional transitions

S.E. Finer (1997)

- State monopoly of violence
  - Externality: robbery & theft, arms race
- Rule of law
  - Pharao: god, king, lawmaker, jugde
  - 10 Commandments, King Salomon
  - Externality: hold up problem
- Democracy
  - Externality: distribution, insurance, veil of ignorance
  - Externality: hold up problem

Extremely unequal income distribution



Role of religion / ideology

- Rousseau's social contract?
  - No, social conflict
- Institutions involve stratification/hierarchy
  - Not necessarily bad
- Religion/ideology justifies power-distribution
  - Coordination device (e.g. omerta rule)
  - *Aristocracies want gentlemen,oligarchies men who respect and pursue money, and democracies lovers of equality* A. Bloom (1987)
  - *Policemen may enforce some of society's activities, but the system as a whole must be self-policing.* K. Binmore (1994)

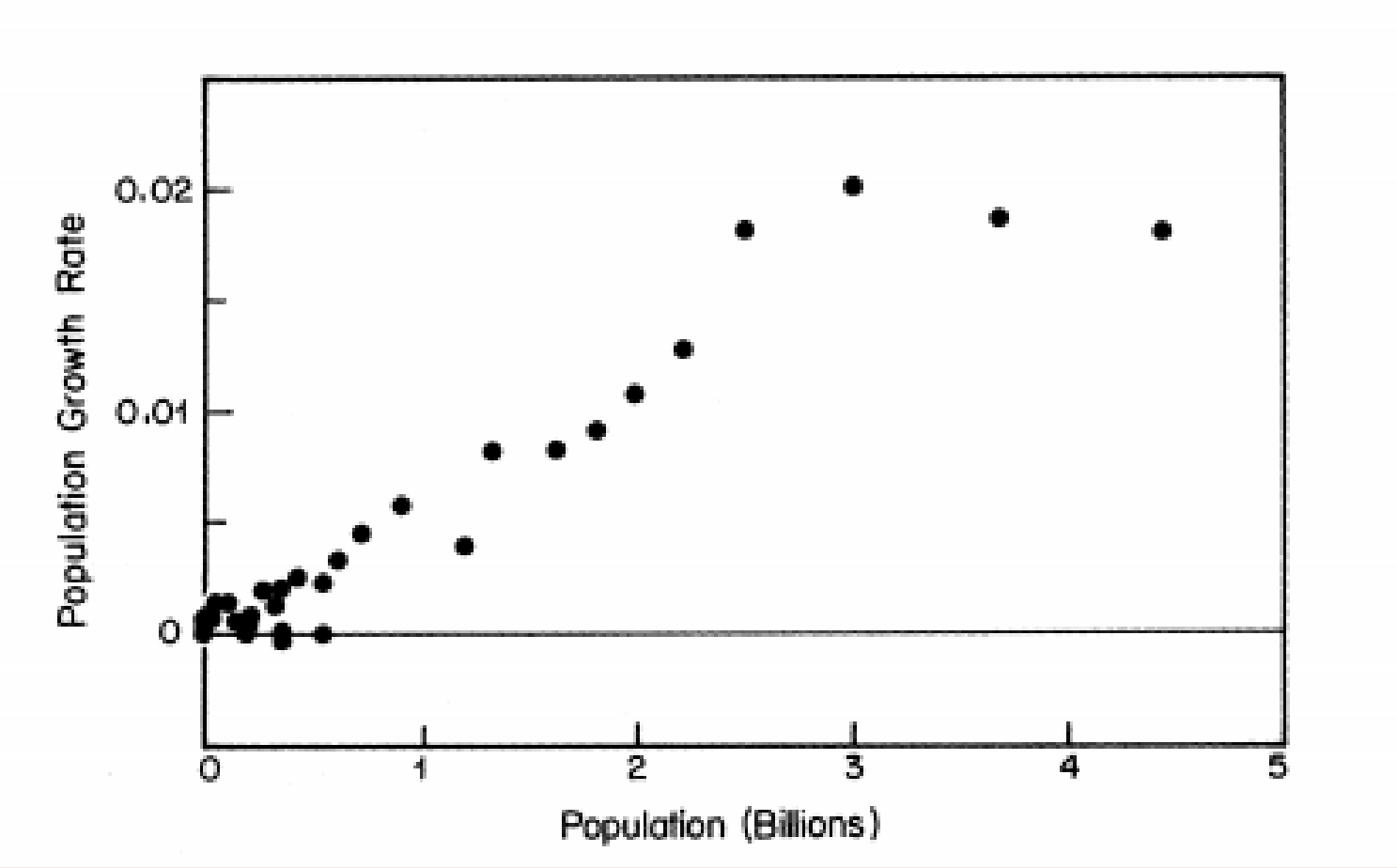
Ideological puzzle: abolitionalism

Malthus & population growth

- Population limited by land and technology
  - Widespread population control in Polynesia
- Hence: population-size measures technology
- Technological progress proportional to number of people
- Hence: population-growth proportional to population-size

Population & population growth

Kremer, QJE (1993)



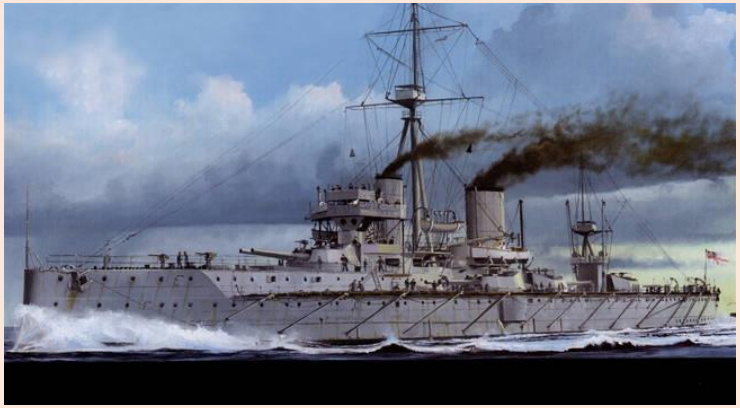
Growth & industrial revolution

C. Jones (2016)

Year	GDP per person	Growth rate	Population (millions)	Growth rate
1	590	...	19	...
1000	420	-0.03	21	0.01
1500	780	0.12	50	0.17
1820	1,240	0.15	125	0.28
1900	3,350	1.24	280	1.01
2006	26,200	1.94	627	0.76

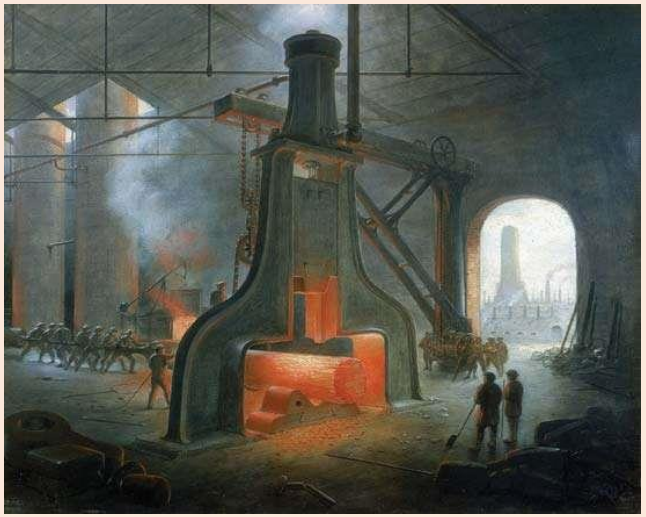
Warfare & Industrial revolution

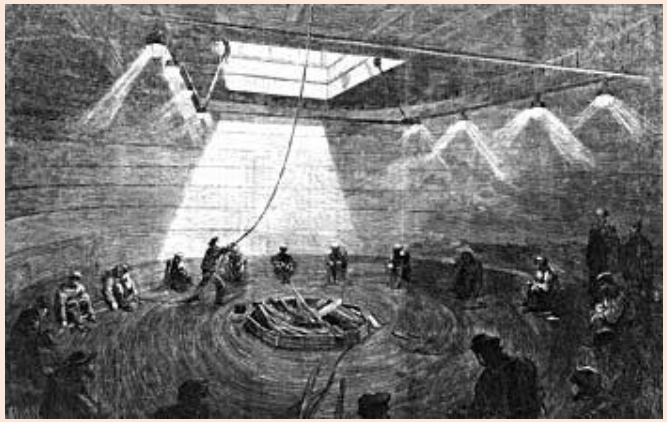
warschip 1605, 1705, 1805, 1906

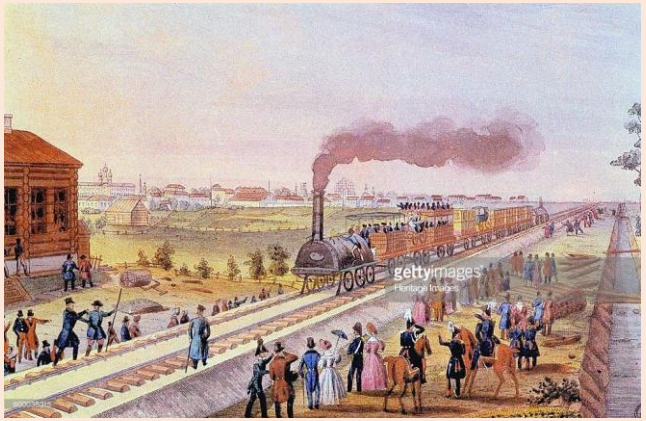


Industrial revolution

R.J. Evans (2016)





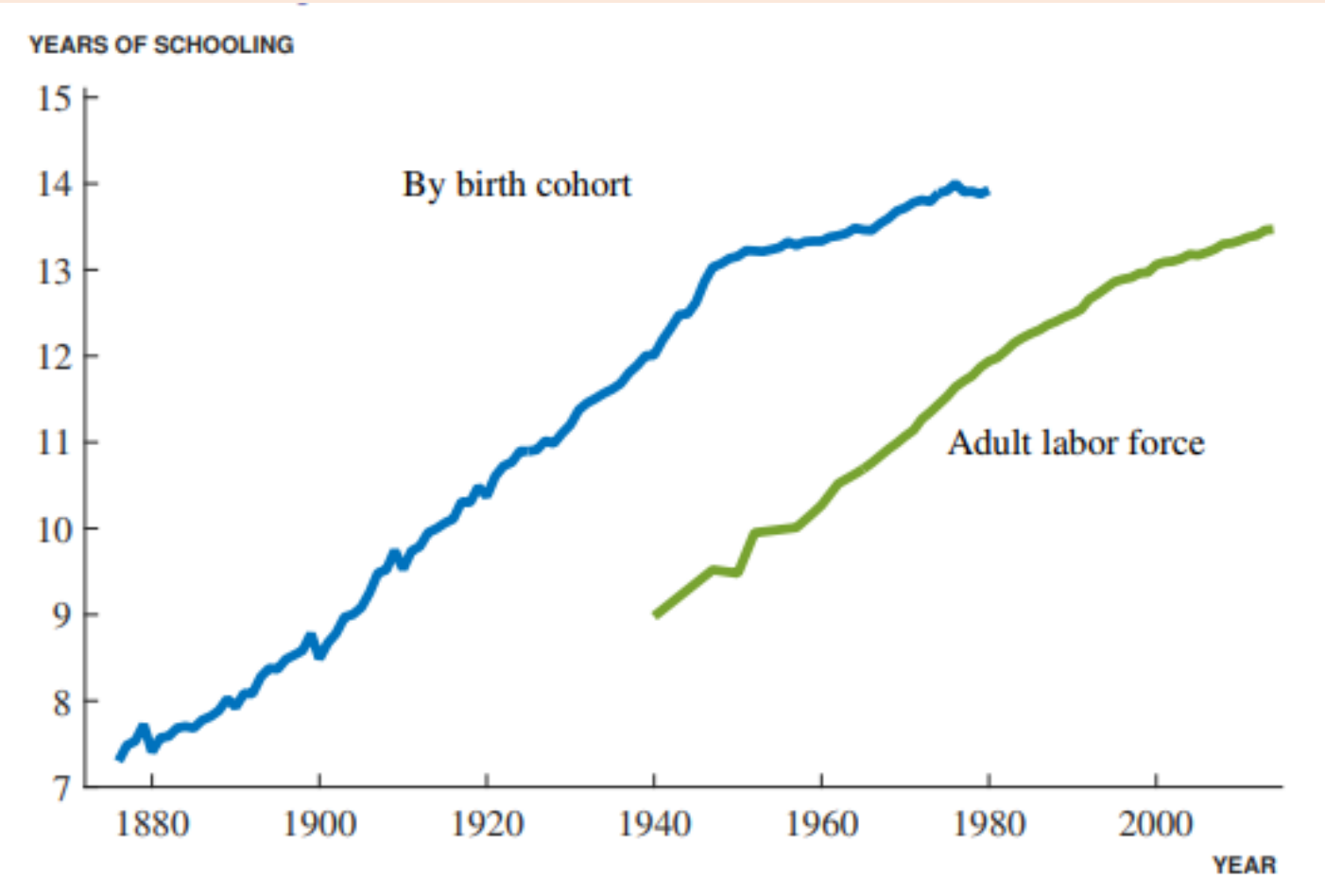


Endogenous technology

- Knowledge = public good
  - Externalities
  1. Non-rivalness: underutilization
  2. Non-excludable: underproduction
     - Solution: patents
     - New externality: arm race
- Tacit knowledge / proximity required
  - Cities and knowledge spill over
  - Third world cities

The education revolution in US

C. Jones (2016)



Urbanization & industrial revolution

Bairoch (1988)

Country	1300	1500	1700	1800	1910	1980
Belgium	25–35	30–45	26–35	18–22	57	70
England	6–9	7–9	13–16	22–24	75	79
France	9–11	9–12	11–15	11–13	38	69
Germany	5–8	7–9	8–11	8–10	49	75
Italy	15–21	15–20	14–19	16–20	(40)	65
Netherlands	8–12	20–26	38–49	34–39	53	82
Portugal	8–11	11–13	18–23	14–17	16	34
Russia	3–6	3–6	4–7	5–7	(14)	61
Spain	13–18	10–16	12–17	12–19	(38)	73
Switzerland	5–7	6–8	6–8	6–8	33	58
Europe	7–9	7–9	9–12	9–11	41	66
	15–21	15–21	15–21	15–21		

Striking contrast: NYC - Lagos

Conclusions

- Fascinating progress in knowledge of history
- Economic mechanisms can explain trends
  - Scale / proximity
  - Institutions to counter externalities
  - Institutions supported by belief systems
  - Institutions tend to become more complex
- Many common patterns, but also differences
  - E.g. limited state monopoly of violence in US
- Similar pattern to evolution in biology