

# People and Technology

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Symbolic Systems 100

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# Some related questions

- Is information technology prosocial? Good for humanity?\*
- Do we control technology or does it control us?
- Is IT the solution to our problem(s)?
- Can we escape from technology? Do we have any choice?

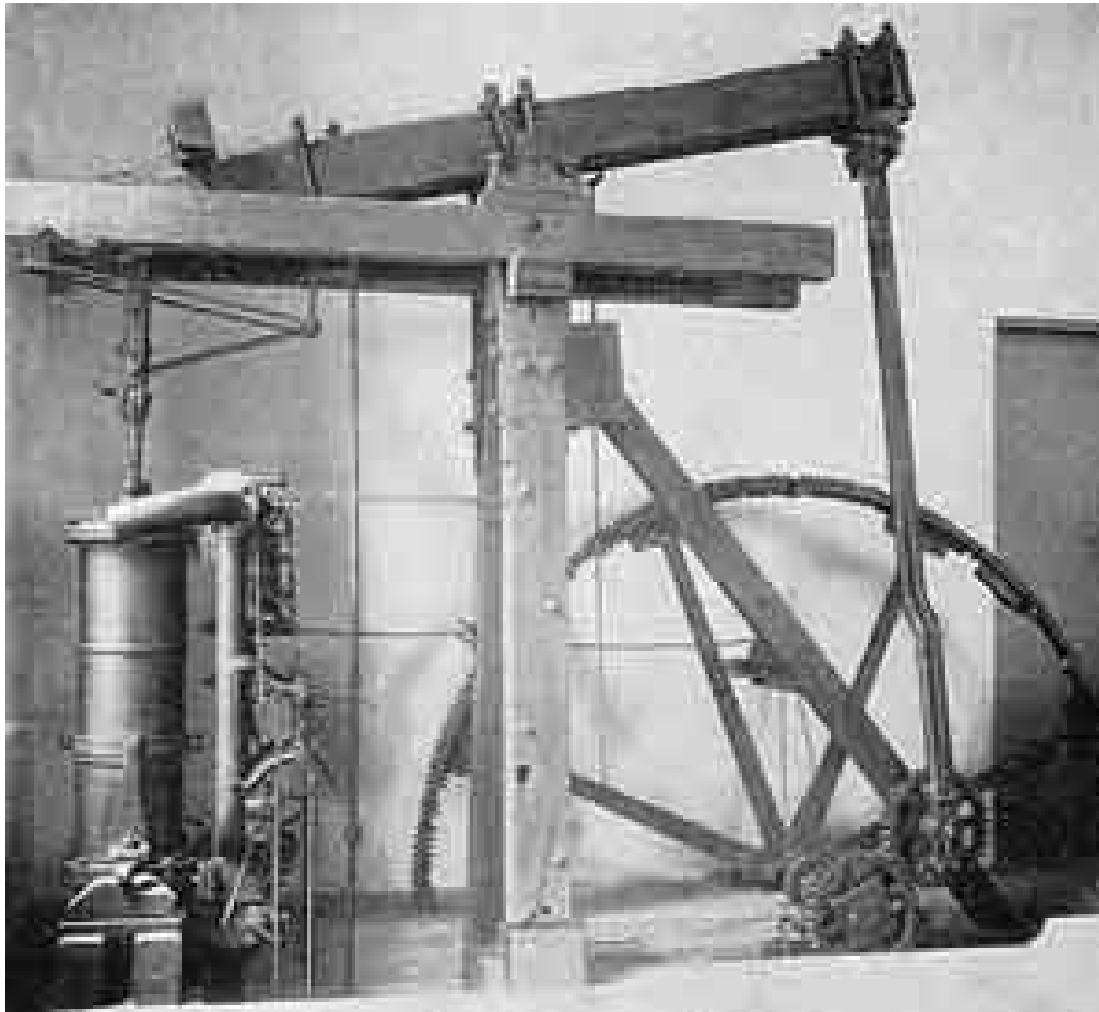
# Scottish enlightenment (late 18th-early 19<sup>th</sup> Centuries)

- representative thinkers: Hume, Smith, Watt

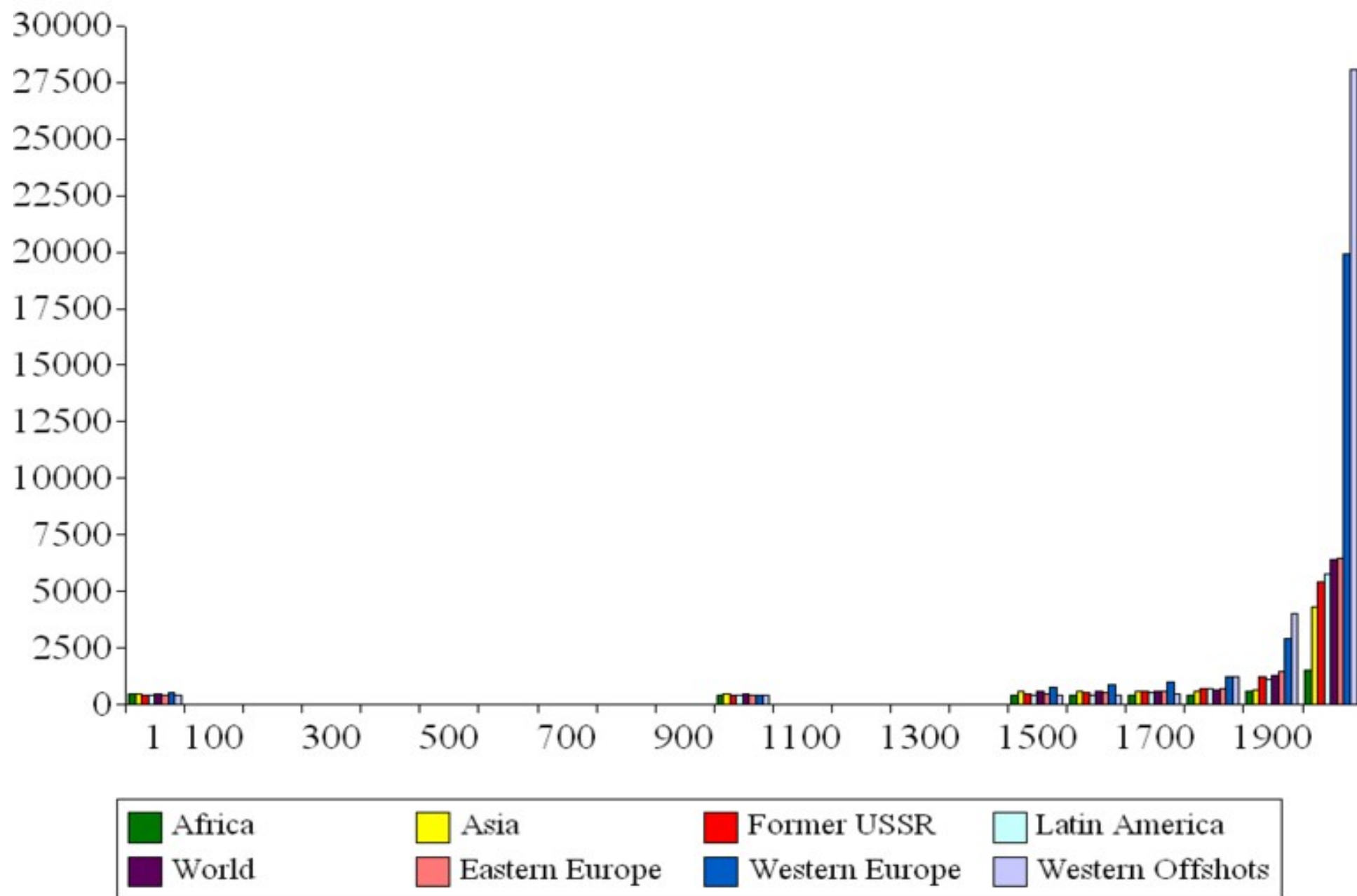
common themes:

- rationality and reason
- science and technology
- a “can do” attitude about changing human conditions by applying reason
- empiricism
- practicality

# The steam engine (18<sup>th</sup> century)



# World GDP/capita 1-2003 A.D.



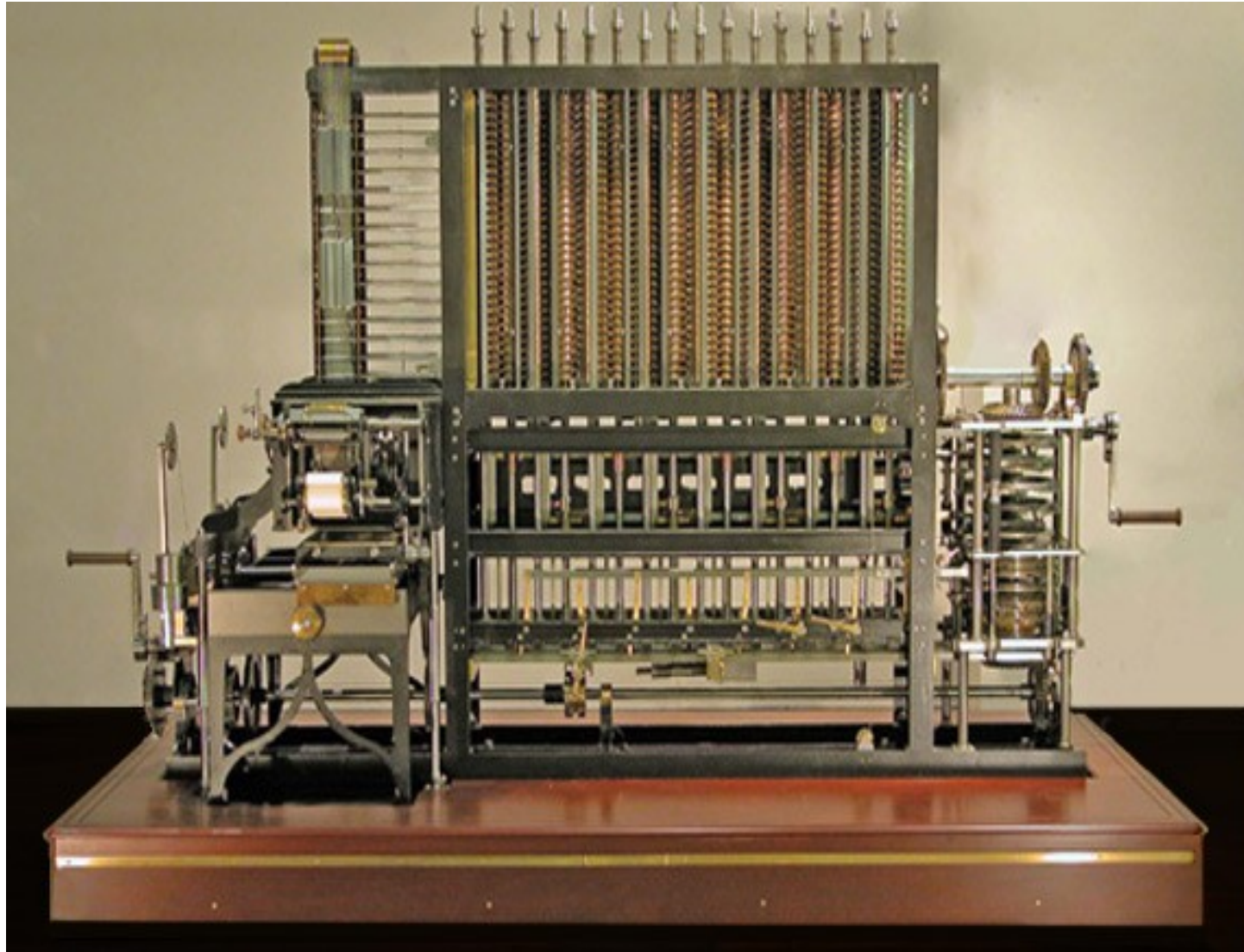
# Industrial revolution(s) - 17th/18<sup>th</sup> Centuries

- dramatic increase in commerce
- explosion of technological innovation
- rise of capitalism, decline of feudalism and monarchy in europe

# Information technology – major innovations

- writing (4<sup>th</sup> Millennium BCE)
- postal mail (persia, 2<sup>nd</sup>/1<sup>st</sup> Mill. BCE)
- printing press (1430s, Guttenberg)
- telegraph (1830s), Morse code
- telephone (1875, Bell)
- phonographic recordings (1877, Edison)
- radio/wireless communication (1880s-'90s)
- television (1920s)
- electronic computers (1940s)
- satellite communication (early 60s)
- Arpanet/Internet (late 60s, early 70s)
- cell phones (70s and 80s)
- World Wide Web (1991, Berners-Lee)

# Babbage engine (1822/2002)





# Adam Smith (1723-1790)



- “Theory of Moral Sentiments” (1759)
  - empathy is innate
- “Wealth of Nations” (1776)
  - ~beginning of economics
  - division of labor as a mechanism for wealth creation
  - self-interest as a positive/descriptive assumption
  - trade and commerce within and between nations
  - “invisible hand”

# The “invisible hand”

- Pursuit of self-interest by individuals *can* lead to socially beneficial outcomes
- examples: traffic on a highway; correction of supply shortages when higher price attracts production
- Smith did not claim self-interest is always socially beneficial – recall social dilemmas

# WoN III.4: How Commerce of Towns Contributed to Improvement of the Country

## Benefits of commerce:

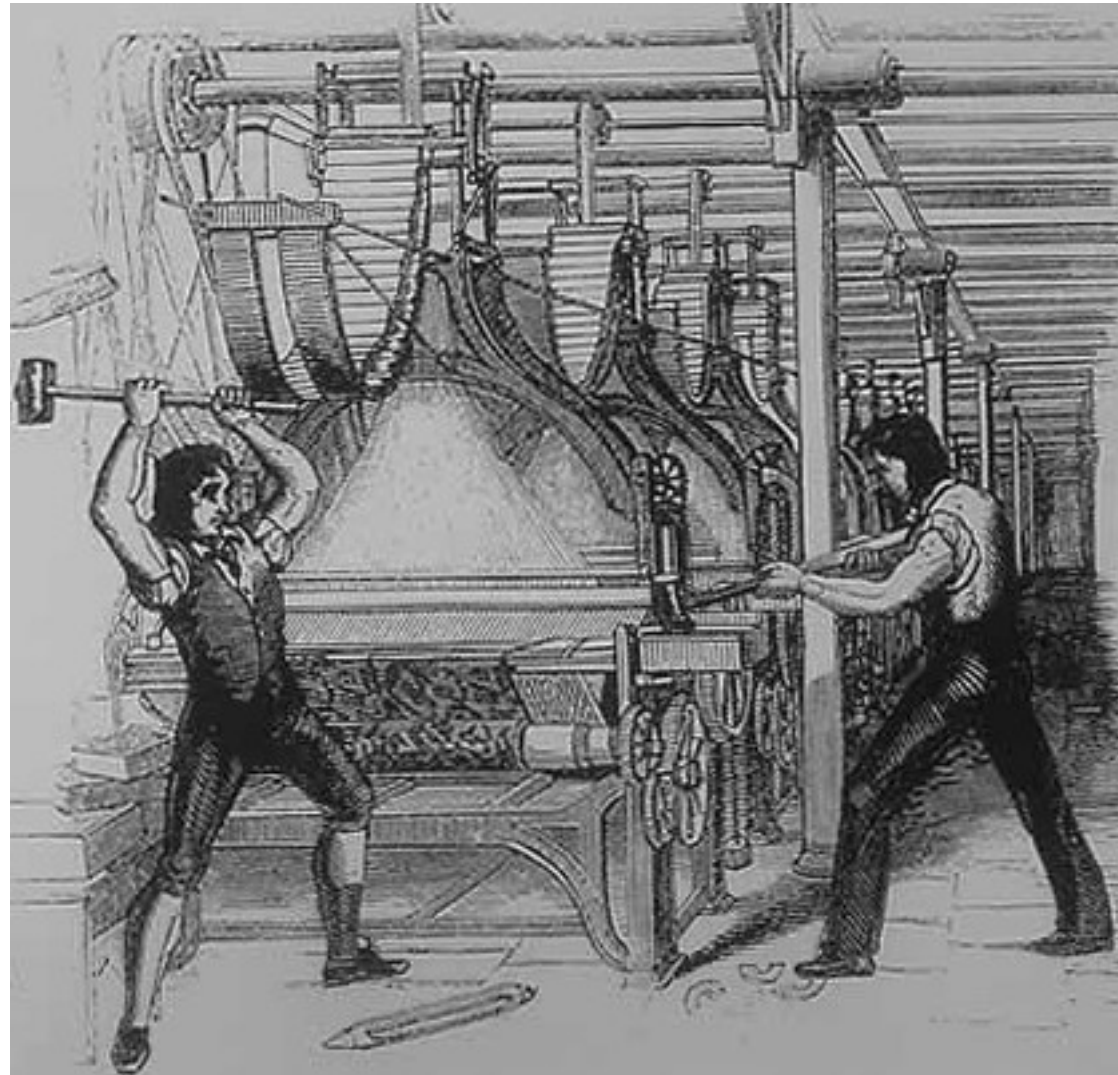
- encourages production inside and outside the country
- encourages land purchase and development
- brings about “order and good government”

### III.4.16

“A revolution of the greatest importance to the public happiness was in this manner brought about by two different orders of people who had not the least intention to serve the public. To gratify the most childish vanity was the sole motive of the great proprietors.

The merchants and artificers, much less ridiculous, acted merely from a view to their own interest, and in pursuit of their own pedlar principle of turning a penny wherever a penny was to be got. Neither of them had either knowledge or foresight of that great revolution which the folly of the one, and the industry of the other, was gradually bringing about.”

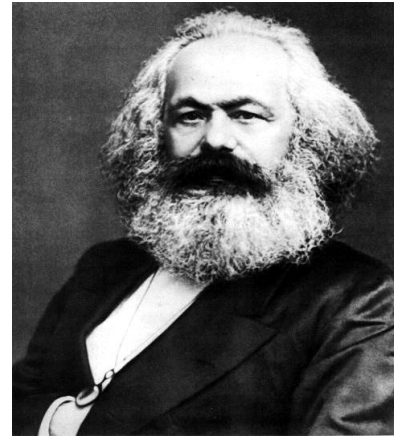
# Backlash: The Luddites (1811)



# “Utopian socialism” and Robert Owen (1771-1858)

- began as successful factory manager
- argued poverty caused by machines
- plan to solve poverty through small communities
- environmental determinist
- favored cottage industry, not factories
- New Harmony, Indiana (1825) – failed experiment

# Karl Marx (1818-1883)



- critic of utopian socialism (his term) as not rooted in class struggle
- developed “scientific socialism”
- popularized: “From each according to his ability, to each according to his need” (1875)

# Back to Smith (WoN III.4.4)

“The great proprietor ...  
is at all times, therefore, surrounded with a multitude of retainers and dependants, who, having no equivalent to give in return for their maintenance, but being fed entirely by his bounty, must obey him, for the same reason that soldiers must obey the prince who pays them. Before the extension of commerce and manufacture in Europe, the hospitality of the rich, and the great, from the sovereign down to the smallest baron, exceeded everything which in the present times we can easily form a notion of.”



# Marx on accumulation of capital

"It is concentration of capitals already formed, destruction of their individual independence, expropriation of capitalist by capitalist, transformation of many small into few large capitals ... Capital grows in one place to a huge mass in a single hand, because it has in another place been lost by many ... The battle of competition is fought by cheapening of commodities. The cheapness of commodities demands, *caeteris paribus*, on the productiveness of labour, and this again on the scale of production. Therefore, the larger capitals beat the smaller. It will further be remembered that, with the development of the capitalist mode of production, there is an increase in the minimum amount of individual capital necessary to carry on a business under its normal conditions. The smaller capitals, therefore, crowd into spheres of production which Modern Industry has only sporadically or incompletely got hold of. Here competition rages ... It always ends in the ruin of many small capitalists, whose capitals partly pass into the hands of their conquerors, partly vanish." ("Das Kapital", vol.1, ch. 25)

# But what does this have to do with technology? - commodity fetishism

A commodity is therefore a mysterious thing, simply because in it the social character of men's labour appears to them as an objective character stamped upon the product of that labour; because the relation of the producers to the sum total of their own labour is presented to them as a social relation, existing not between themselves, but between the products of their labour.

In order, therefore, to find an analogy, we must have recourse to the magicist-enveloped regions of the religious world. In that world the productions of the human brain appear as independent beings endowed with life, and entering into relation both with one another and with the human race. So it is in the world of commodities with the products of men's hands. This I call the Fetishism which attaches itself to the products of labour, so soon as they are produced as commodities, and which is therefore inseparable from the production of commodities.

# What is the mechanism?

- social relations are obscured through commodities
- can only be revealed by “freely associated men”
- “the process of production has mastery over man” and bourgeois are not aware of this

# Marshall McLuhan (1911-1980)

- technology, not class struggle over means of production, drives history
- media as “extensions of man”

# “the medium is the message”

- changes scale of human activity
- example: the electric light as an information technology

# Cialdini: psychology of influence

- McLuhan: global village
- IT makes us more dependent on mental shortcuts – fatigue, rush, overload
- gives power to exploiters, e.g. of social proof
- his answer: resist the exploiters!

# Technology and well-being

- happiness has not increased in U.S. since 1946
- higher inequality, depression, and anxiety
- Amish are happier than most people



# Richard Easterlin (1974)

- money improves happiness dramatically for the poor
- for the non-poor it has little effect

# Psychological mechanisms

- loss aversion
- myopic decision making
- hedonic treadmill – adaptation to new wealth

# Surowieki's optimism

- social uses of IT
- tools for refining choice set (collaborative filtering)
- health care and life span – is this really better?

# Transhumanism

- Singularity is near? - Kurzweil
- 
- Life extension and immortality – DeGray
- 
- Simulation and virtuality – Lanier and Bostrom

