

THE INDUSTRIAL REVOLUTION

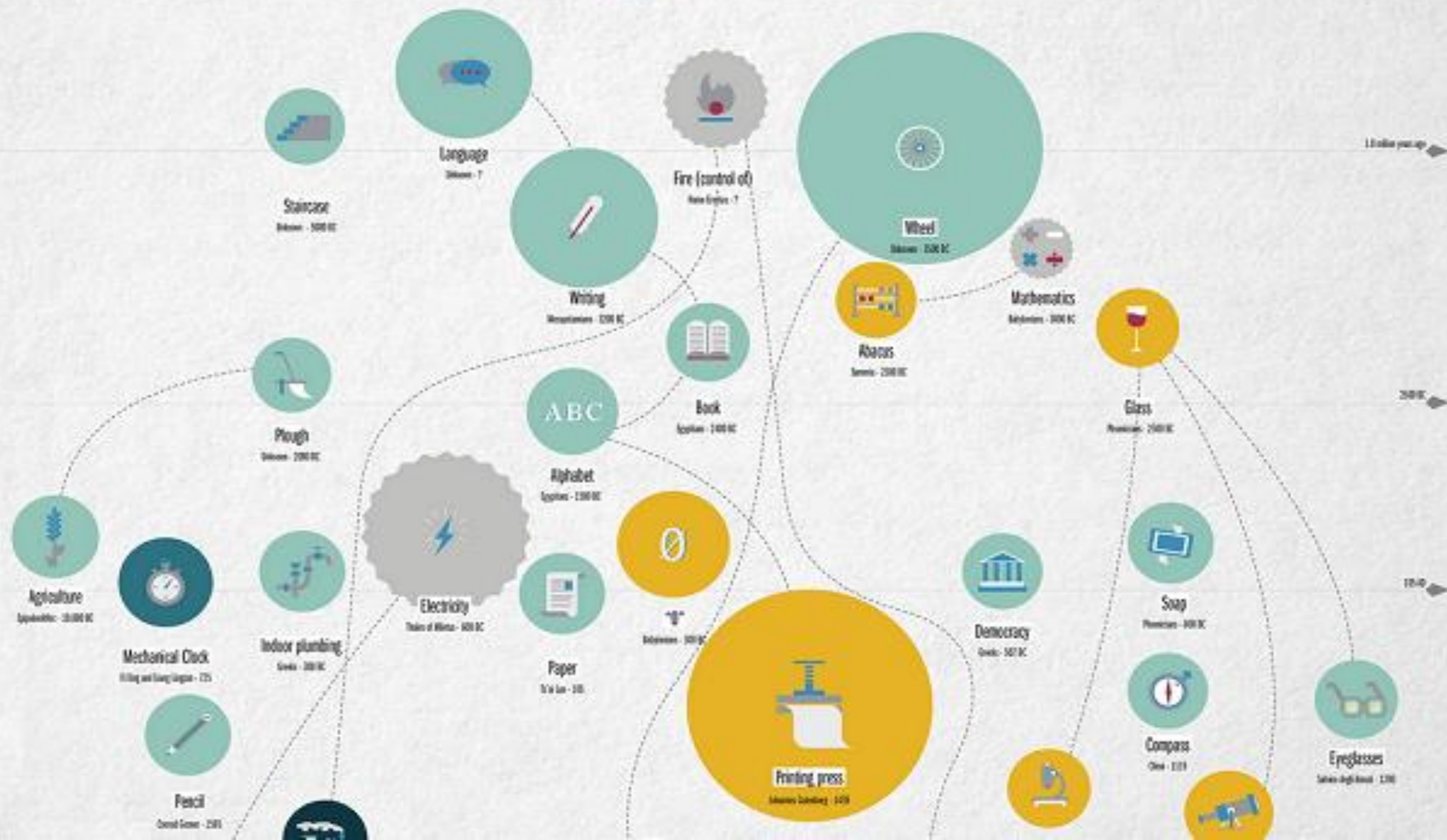


Mr. Violanti / Mrs. Verni

Fall, 2017

Is Technology Good or Bad?

What are the most important
inventions of all time?





THE PROGRESS OF THE CENTURY.
THE LIGHTNING STEAM PRESS. THE ELECTRIC TELEGRAPH. THE LOCOMOTIVE. THE STEAMSHIP.



KEY TERMS: INDUSTRIAL REVOLUTON

1. **Agrarian Revolution:** Started by Enclosure movement and inventions. Increased output of British Farms. (John Deere, Jethro Tull)
2. **Industrial Revolution:** change from man/animal power to machine power. Increased output of factories.
3. **Factory System:** All elements of production under one roof.
4. **Urbanization:** movement from farms to cities.
5. **New Class Structure:** Social Mobility, based in wealth. 

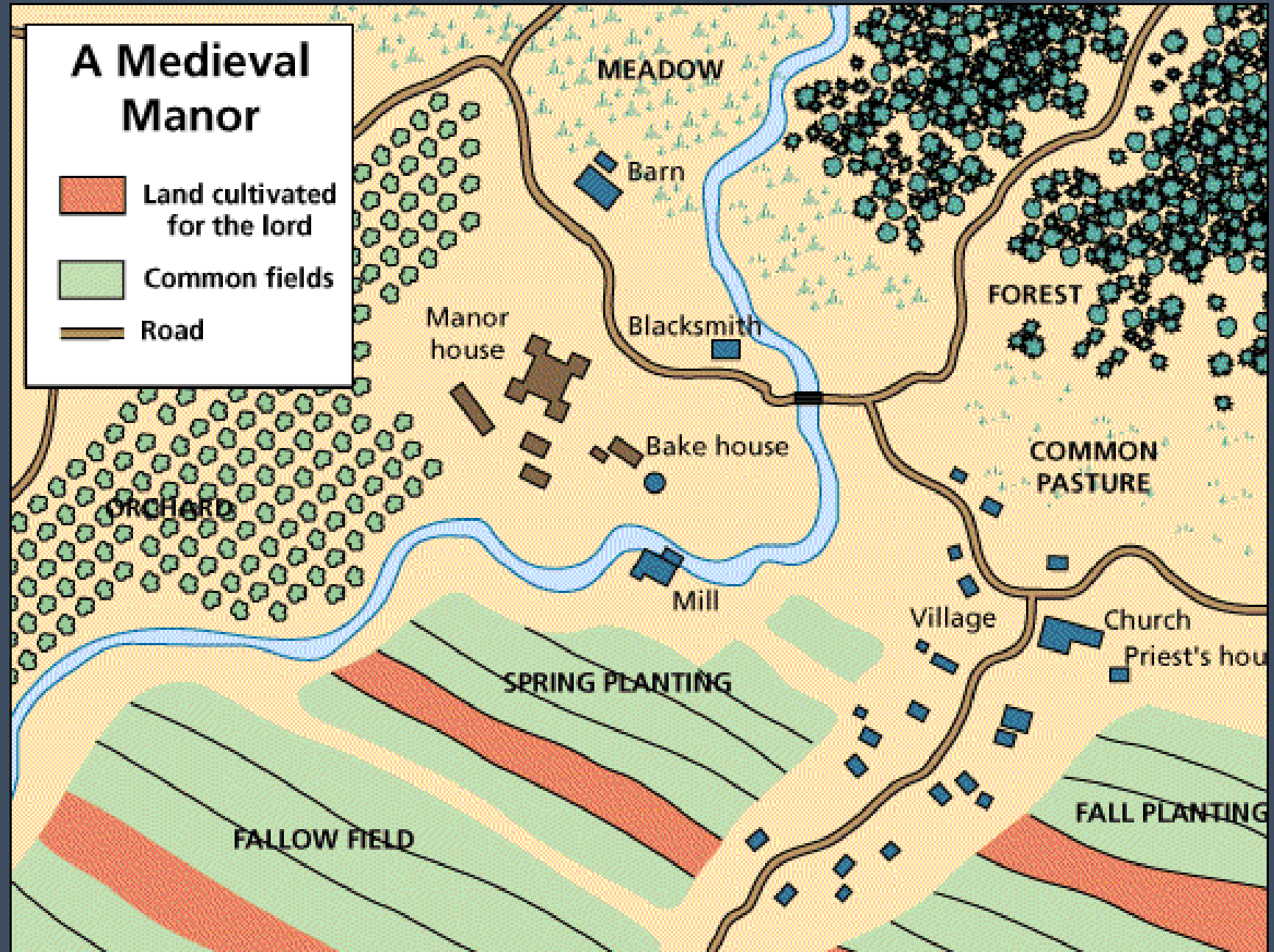
6. **Adam Smith**: Invented CAPITALISM. Wrote “**Wealth of Nations**”.
7. **Capitalism**: Free Market based in Supply and Demand. Laissez Faire.
8. **Supply and Demand**: determine production and price of a good.
9. **Karl Marx**: Wrote “**Communist Manifesto**”, develops theory of Communism/Socialism. Believes in CLASS STRUGGLE.
10. **Socialism**: Government controls economy and all decisions. Opposite of laissez-faire.

11. **Social Darwinism**: strongest people will survive.
12. **Communist Manifesto**: Marx and Engels. Struggle between proletariat and capitalists.
13. **Sadler Commission**: British Parliament ended child abuse in English Factories.
14. **Irish Potato Famine**: Blight hits Irish crop. Causes MIGRATION to England and US.
15. **Meiji Restoration**: the MODERNIZATION and INDUSTRIALIZATION of Japan in 1853.

Agrarian Revolution in Britain

■ Enclosure Movement:

Took land once “shared” by manors and turned it into larger farms, owned by individuals.







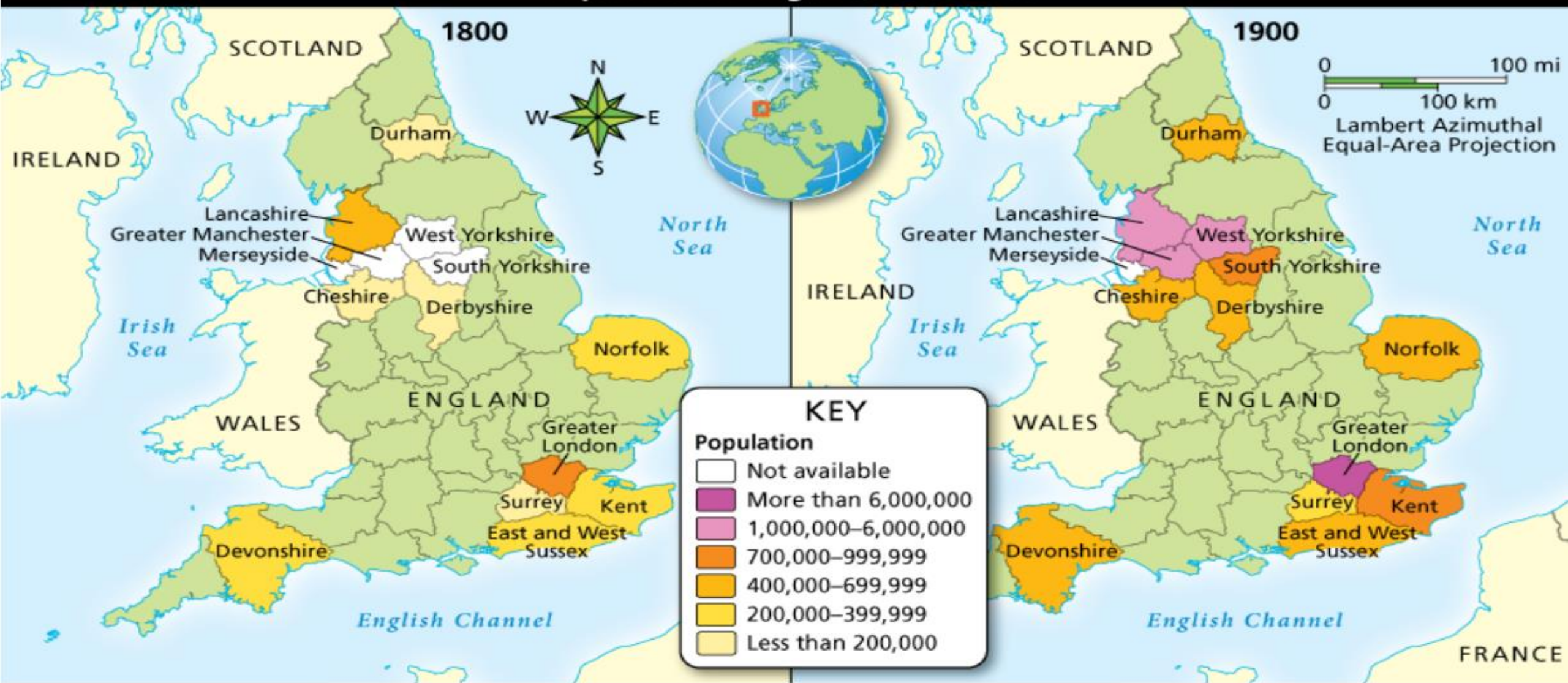
Agrarian Revolution

Inventions cause farming to be easier & more productive:

- *Steel Plow (John Deere)*
- *Irrigation*
- *Seed Drill (Jethro Tull)*

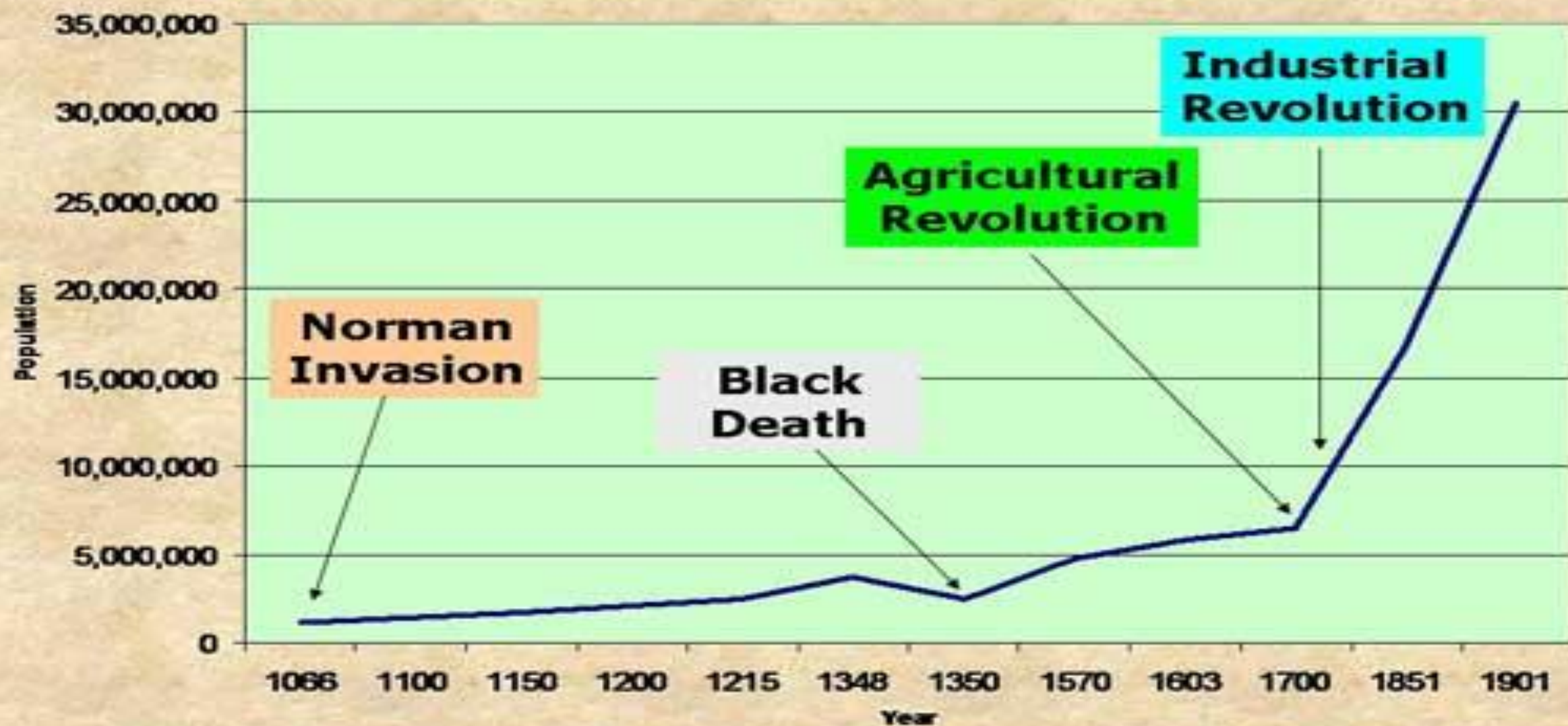
RESULTS: **BETTER DIET**, Longer lives, Population boom (120 million to 190 million)

Population of England, 1800–1900



Analyze Maps Compare the populations of select counties of England in 1800 and 1900. Which counties had the largest population by 1900? Why might those counties have had high populations?

Estimated Population of England 1066 to 1900

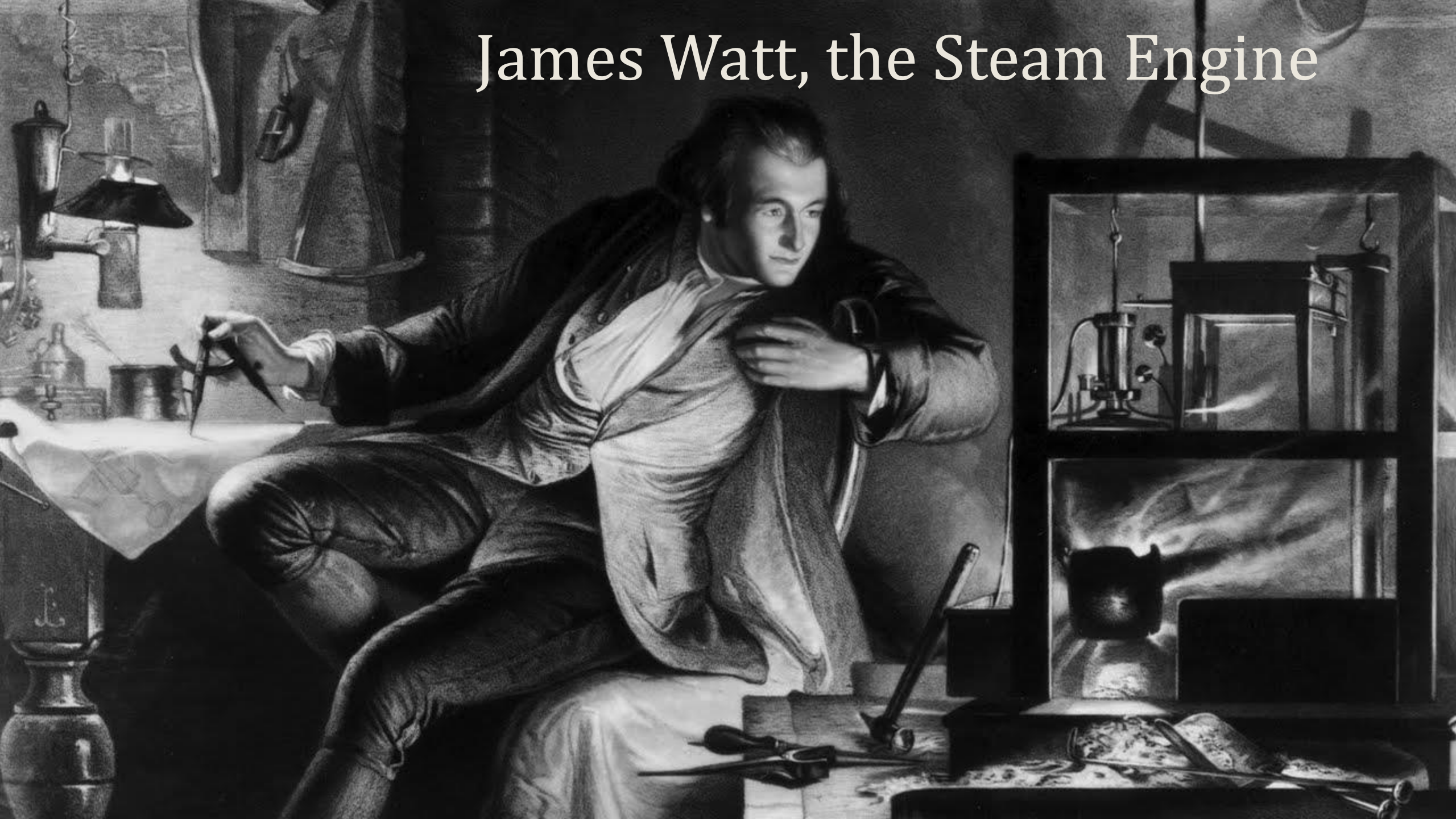


Agrarian Revolution leads to the INDUSTRIAL REVOLUTION.

- A change in the means of production from hand tools and animal power to complex machinery and steam power.



James Watt, the Steam Engine



The Steam Engine

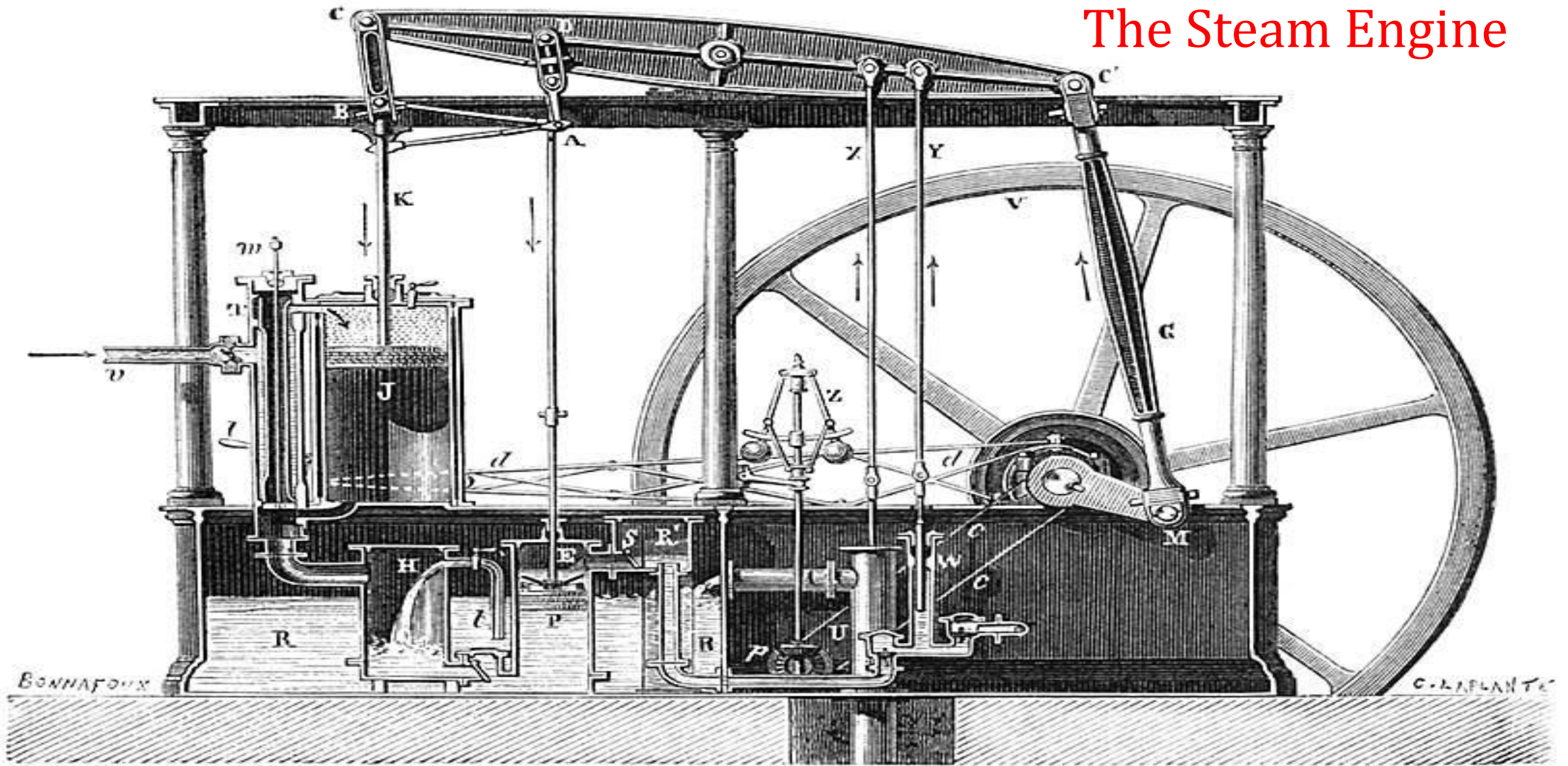


Fig. 59. — Machine à balancier de Watt.

v. Tuyau de prise de vapeur; *T*, tiroir; *J*, cylindre; *H*, condenseur; *PE* pompe d'épuisement; *WY* pompe alimentaire de la chaudière
UX pompe d'alimentation de la bache *R*; *p Z* régulateur; *dd* excentrique; *ABCD* parallélogramme; *GM* bielle et manivelle; *V* volant.

The Steam Engine

THE
STEAM
ENGINE

CAUSES OF THE INDUSTRIAL REVOLUTION

1. **England's Geography:** England had large supplies of coal, iron ore, harbors, rivers.
Industrial Revolution begins here.
2. **Population Growth:** Agrarian Revolution → More Food → Better Health → Increased Population.
3. **Capital:** More money for investment.

Why Did the Industrial Revolution Start in Britain?



Analyze Maps Notice where various resources and industries were located in 1750. Why is the location of navigable rivers important to resources and industry?

Why do
people move?

Effects of the Industrial Revolution

1. Urbanization: Fast Growth of Cities = positive / negative results.



Urbanization and the Growth of Cities

Urbanization

1900 | 2 out of every 10 people lived in an urban area



1990 | 4 out of every 10 people lived in an urban area



2010 | 5 out of every 10 people lived in an urban area



2030 | 6 out of every 10 people will live in an urban area



2050 | 7 out of every 10 people will live in an urban area

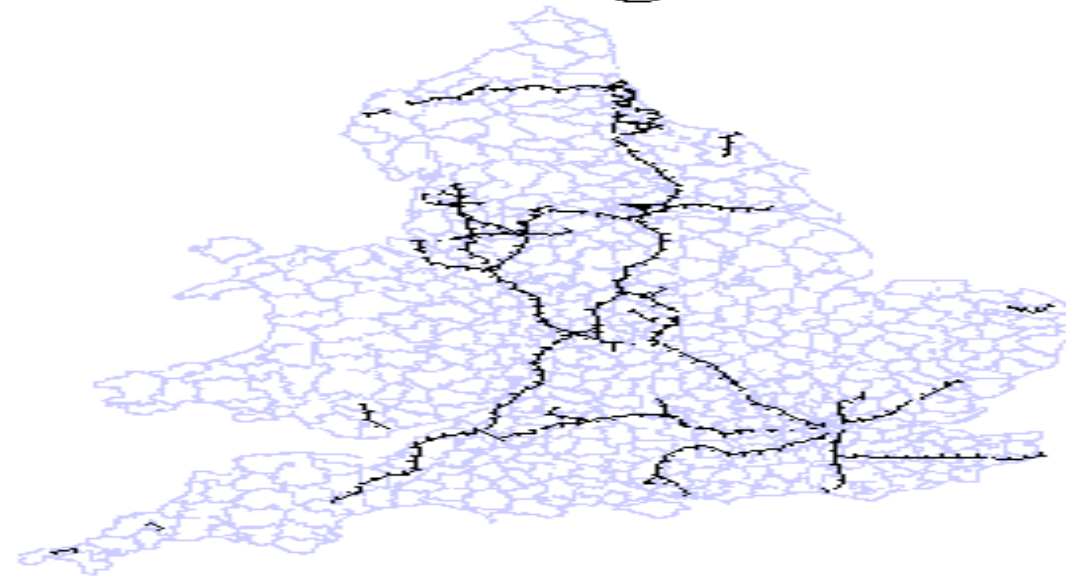


Defined by UN HABITAT as a city with a population of more than 10 million

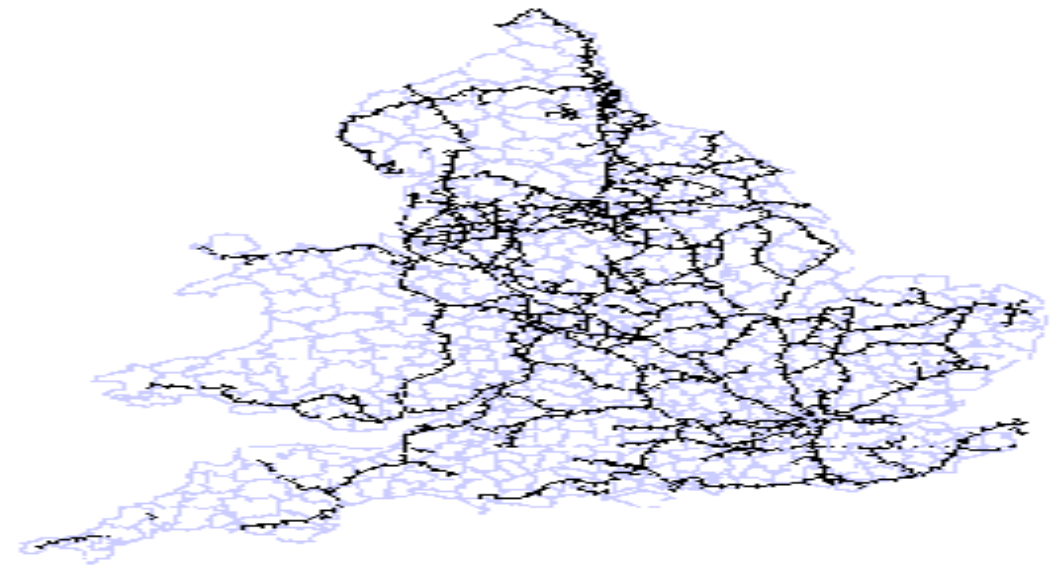




The Extension of the Railway System in England and Wales, 1845-1914

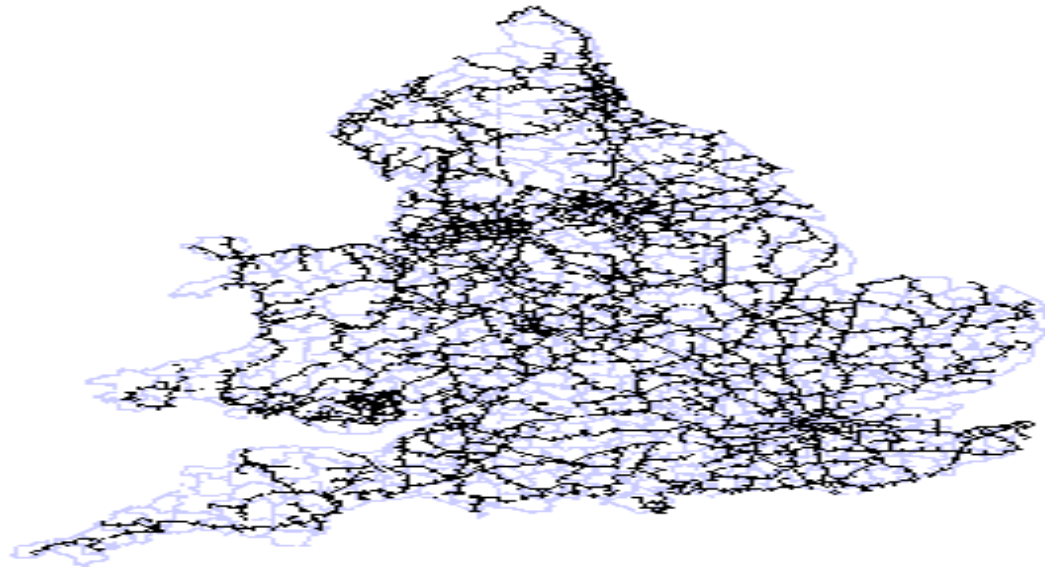


1845

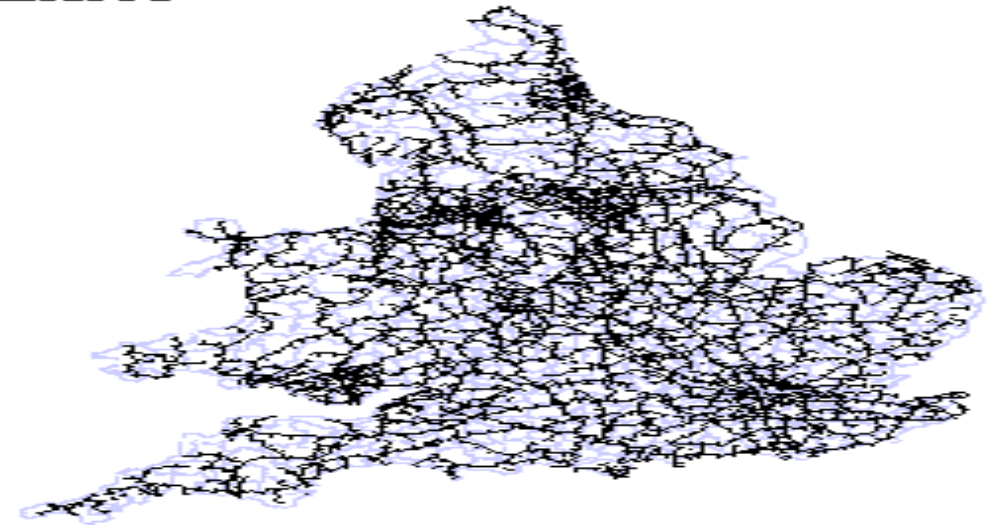


1854

—— Rail Lines



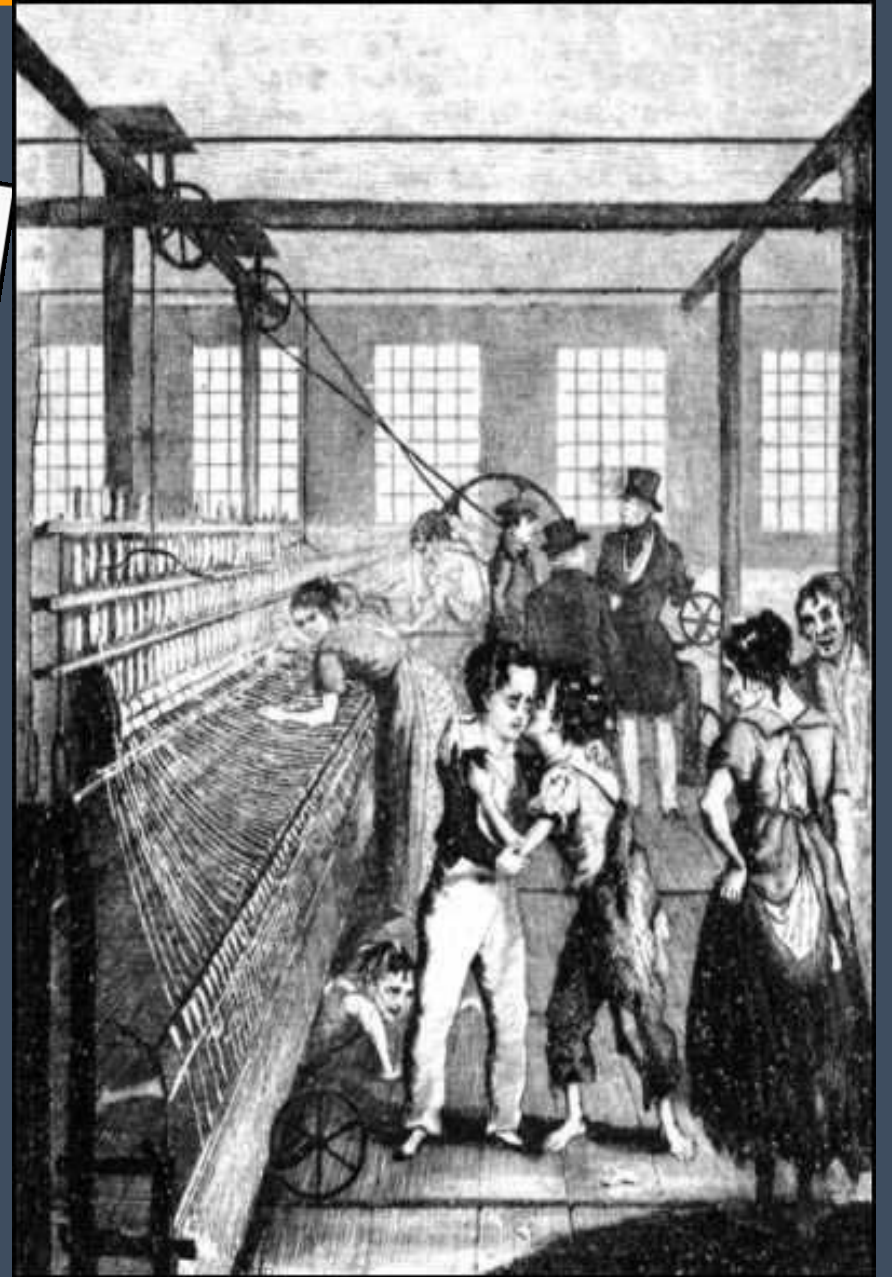
1876



1914

2. Poor Working Conditions

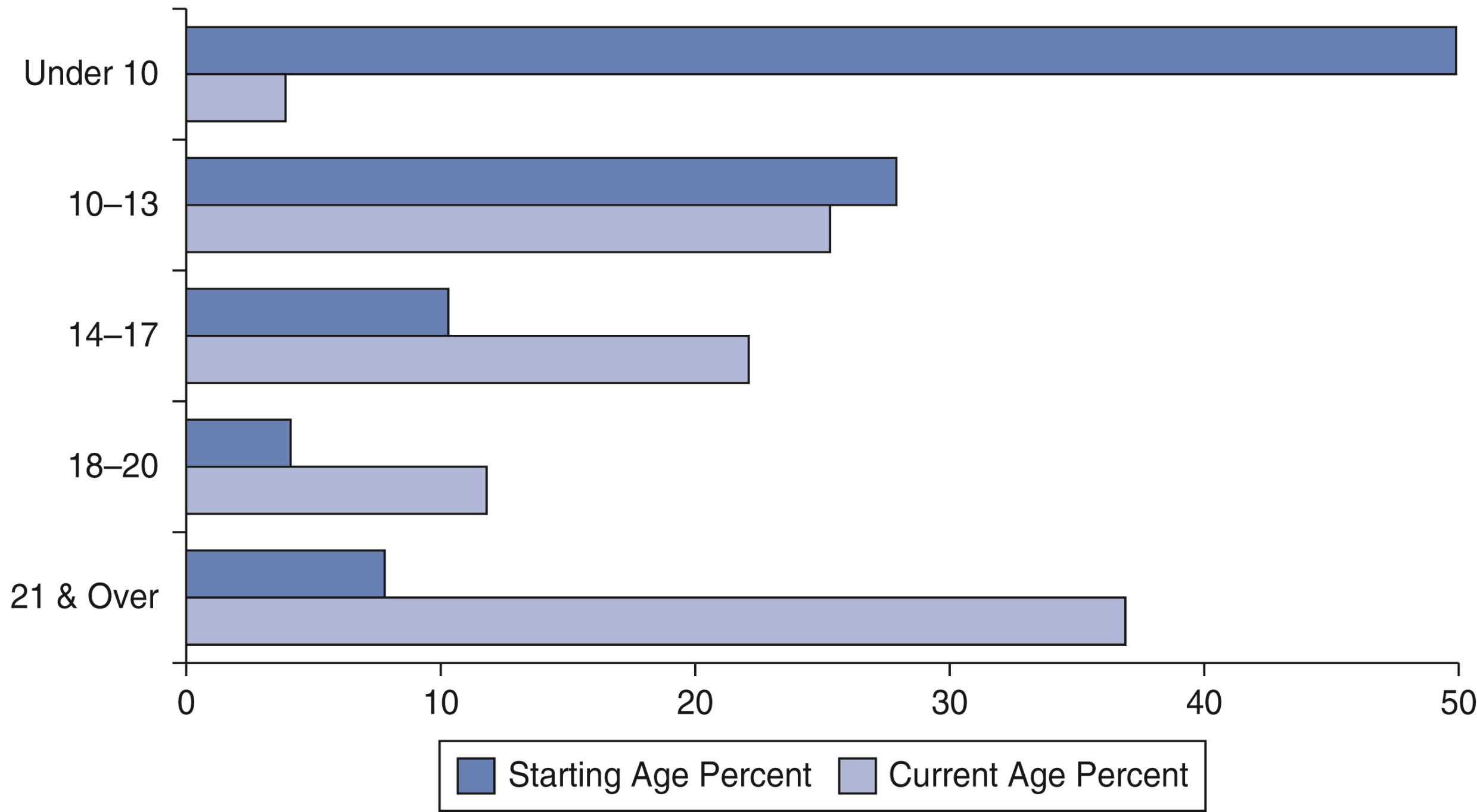
Dangerous conditions.
Young children,
women. Work 12-16
hours per day.





Age Distribution in Cotton Factories, 1818–1819

Age group



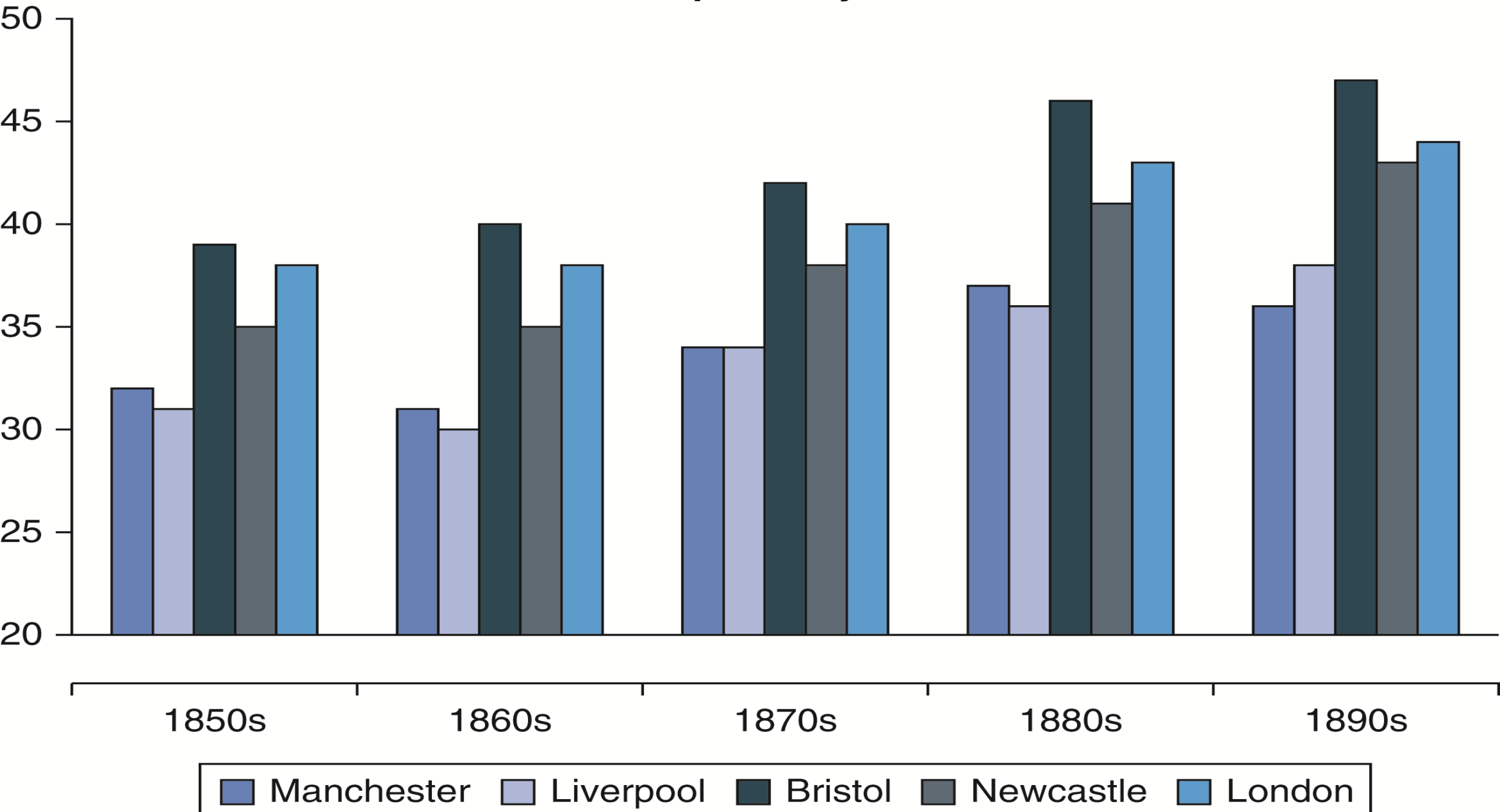


Replacing bobbins on machinery

Kids At Work, Russell Freedman, Scholastic, 1994. Photo by Lewis Hine

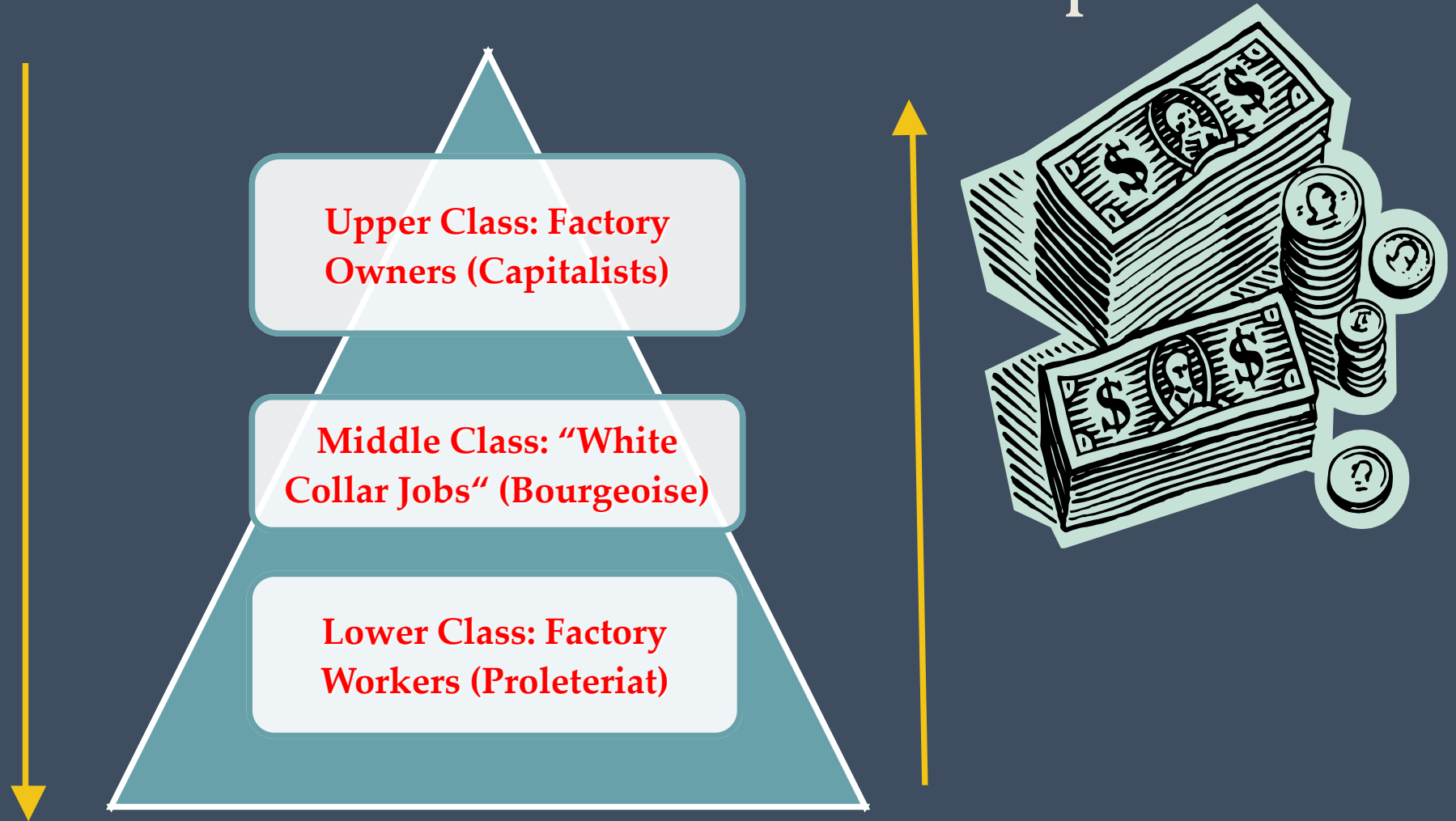


Life Expectancy at Birth



3. New Class Structure Industrial Revolution

Creates a new MIDDLE CLASS made up of workers.



Social Mobility: People can move from class to class.

SOCIAL CLASS CHANGES IN ENGLAND

Class was based on social rank as well as income. Manners, clothing, background, and way of life all distinguished the various classes. For example, a teacher might make less money than a farmer, but socially the teacher would be in a higher class.

17TH-CENTURY ENGLAND



19TH-CENTURY ENGLAND

UPPER CLASS

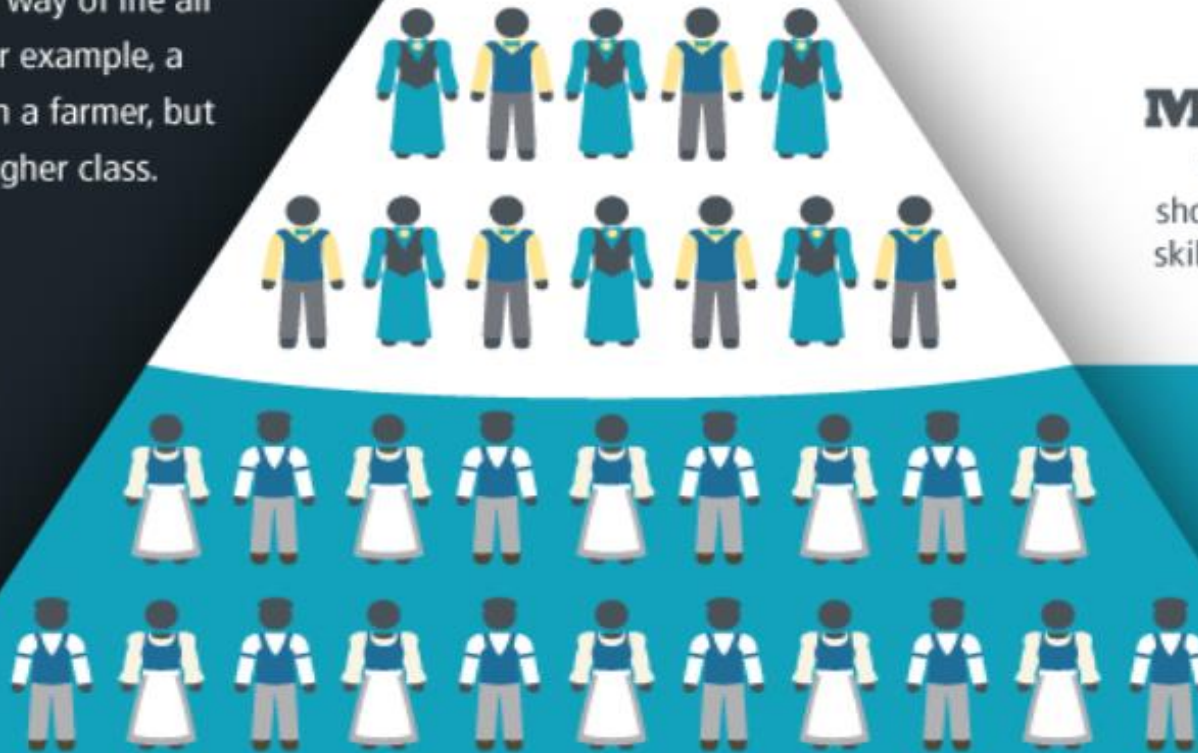
WHO: People of the highest level of society who are usually born into wealth and are the most educated; traditional aristocracy was based on land ownership

GROWING MIDDLE CLASS

WHO: Merchants, inventors, shopkeepers, bankers, teachers, and skilled laborers, some of whom rose from the working class

WORKING CLASS

WHO: Laborers such as agricultural workers, factory workers, and servants

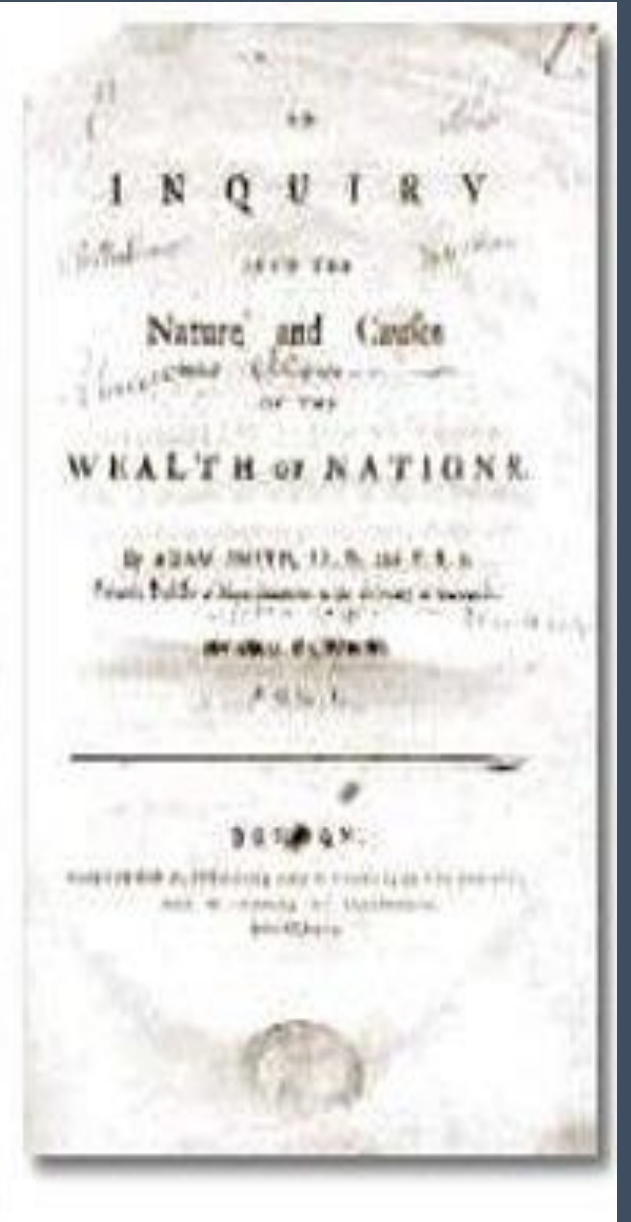


The expanding middle class included working-class people who found new opportunities because of industrialization. Analyze Charts Which class changed the least due to industrialization?

4. New Economic Theories.

Adam Smith: Theory of Capitalism and Laissez-Faire.

- Book: “*Wealth of Nations*”
- LAISSEZ FAIRE:** Gov. should keep its “**Hands Off**” business.
- Let Supply/Demand, free market run economy.
- Social Darwinism:** the strong will survive.



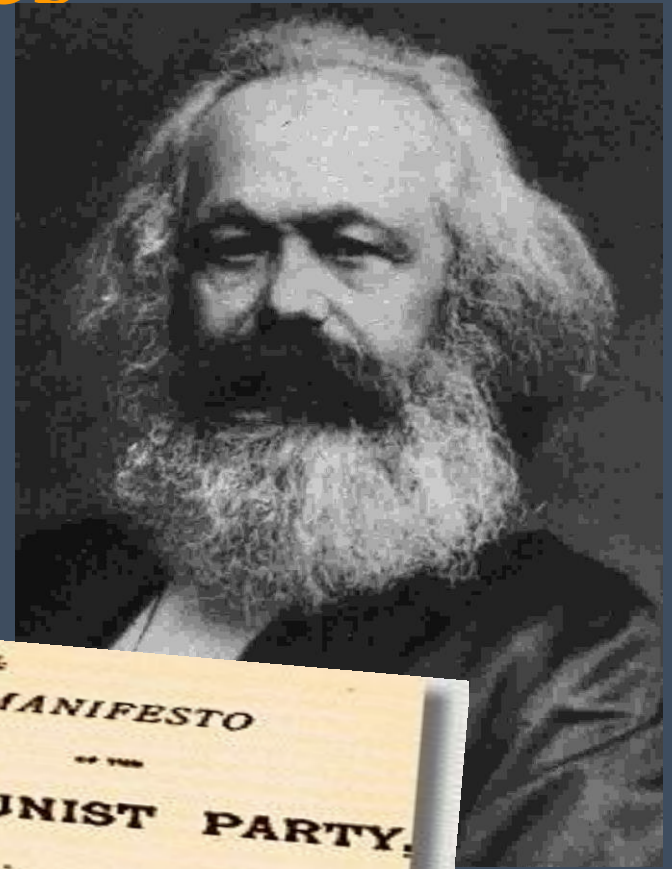
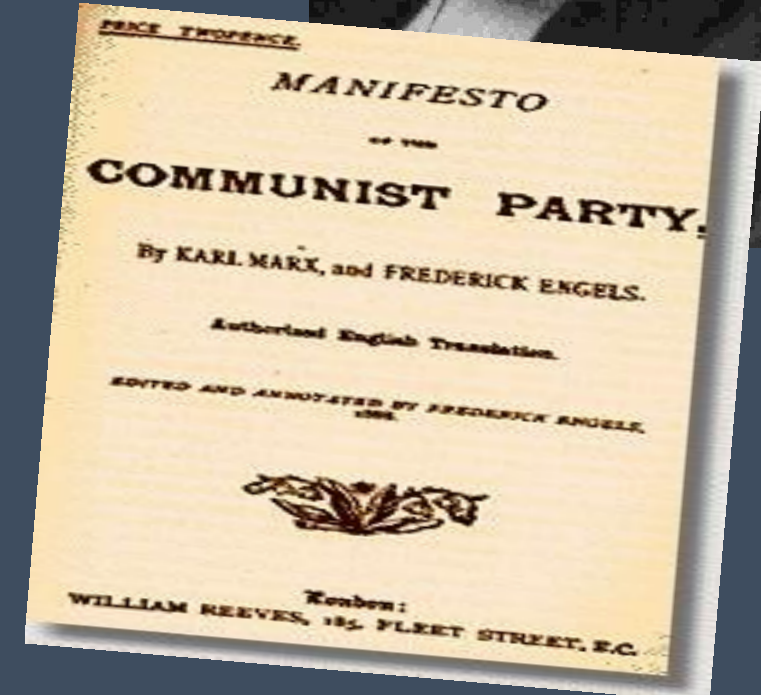
THE MARKET

- ❖ Society can depend on unregulated capitalist markets rather than tradition or authoritarianism
- ❖ Self interest (guided by profit) motivates people to perform tasks required by society (what people are willing to pay for)
- ❖ Competition regulates greed i.e. over chargers lose to those that charge cheaper, even for wages
- ❖ Thus pursuit of self interest leads to communal prosperity
- ❖ Depends on freedom to pursue self interest and compete

Karl Marx & Friedrich Engels

■ “The Communist Manifesto”

- “...*Workers of the world UNITE.
You have nothing to lose but
your chains...*”
- **Socialism**, total gov. control
- Opposite of Laissez-Faire
- Everyone is equal, all shared.
- Struggle between: **Proletariat**
(workers) and **Capitalists**
(owners)



Adam Smith vs. Karl Marx

Smith—Capitalism

- **Individuals** should make decisions. Failure is your fault.
- **Competition, Supply Demand** improve quality and price.
- **Market economy** produces best product at lowest prices.
- Government should not interfere in the economy.
(**laissez faire**)

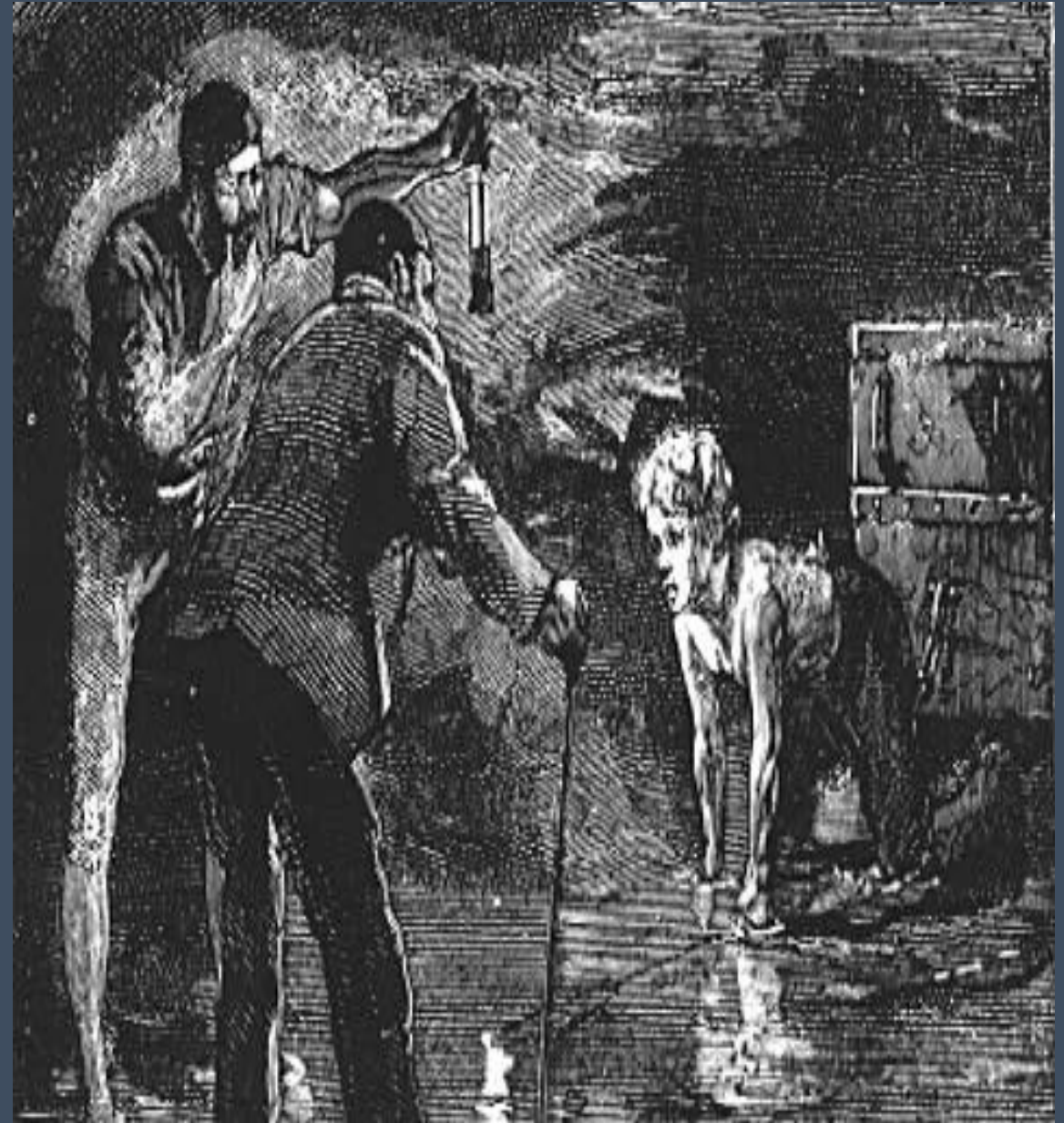


Marx—Communism

- “There has always been a **struggle** between **classes**.”
- **Proletariat** are taken advantage of by **Capitalists**.
- Hard work of workers creates profit for owners.
- Society should have no classes, all equal.



Sadler Commission



Reform Legislation: England

- 1840s-1910 British Parliament passes laws to help stop bad working conditions: (Sadler Commission)
 - *Limit child labor*
 - *Regulating work hours for women/children*
 - *Safety conditions in mines*
 - *Set minimum wages*
 - *Accident and unemployment insurance.*



Problems during the Industrial Revolution

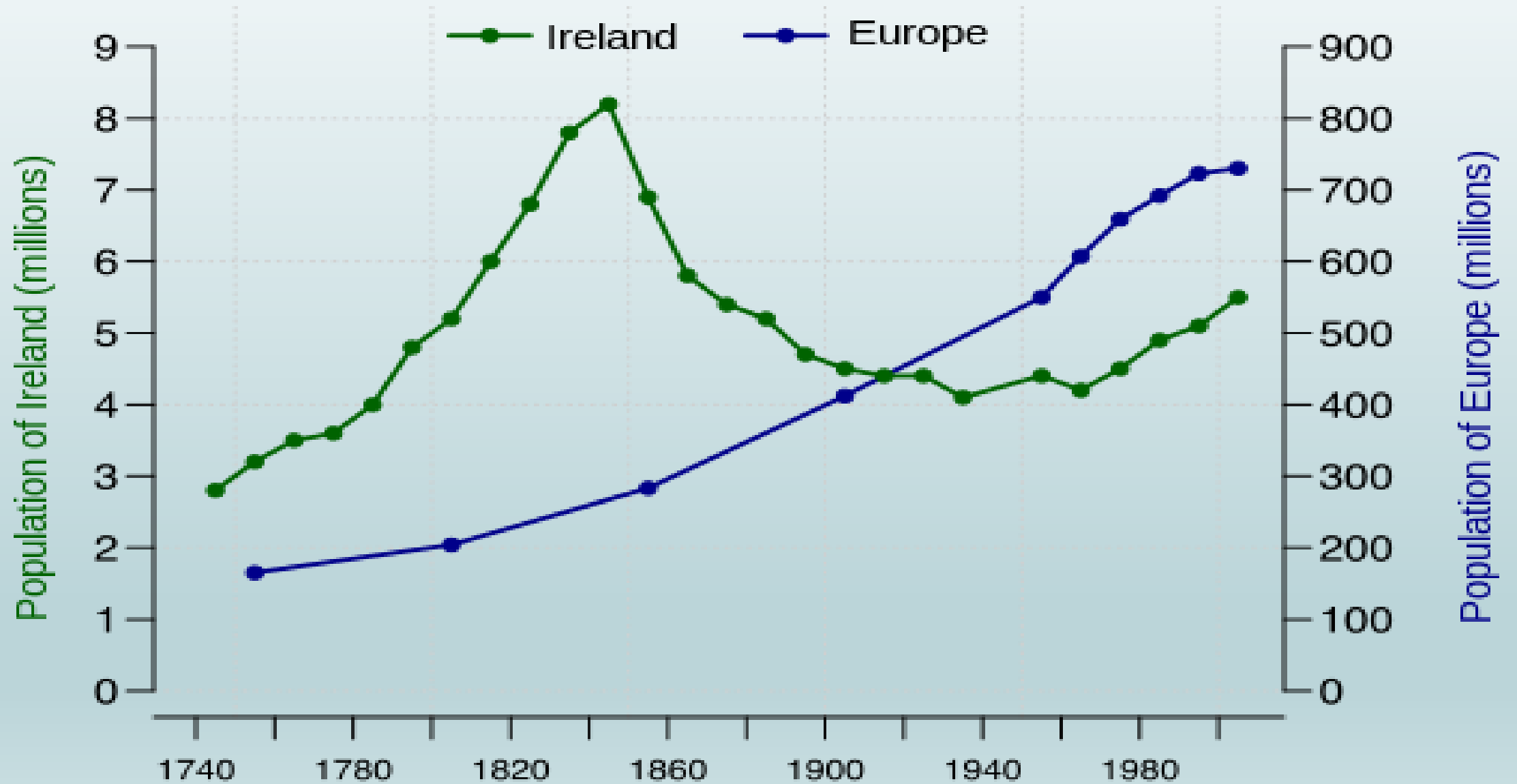
Irish Potato Famine, 1847

Famine in Ireland's potato Crop leads to:

- 1 million deaths in Ireland
- 2 million leave Ireland (migrate to USA)

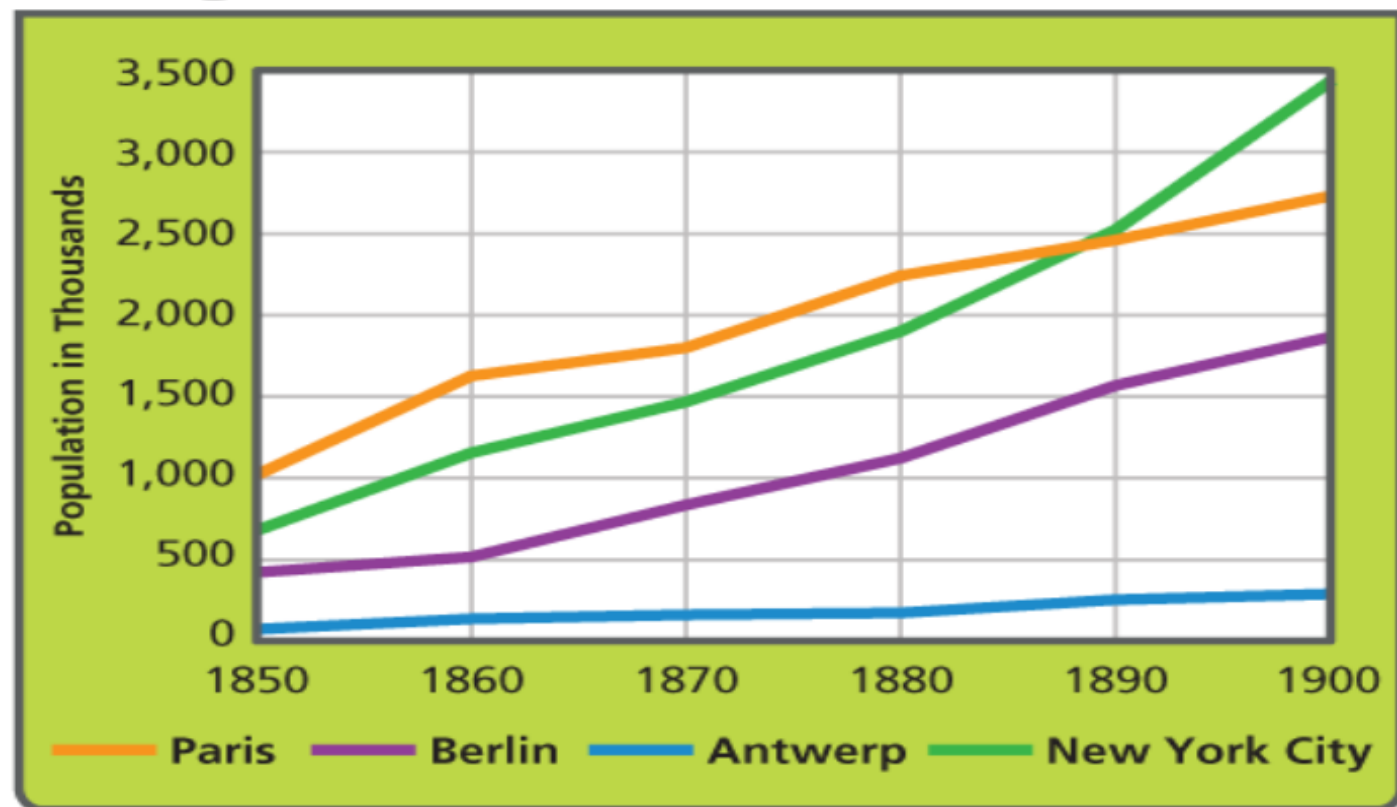


Potato Famine: Effects on Ireland

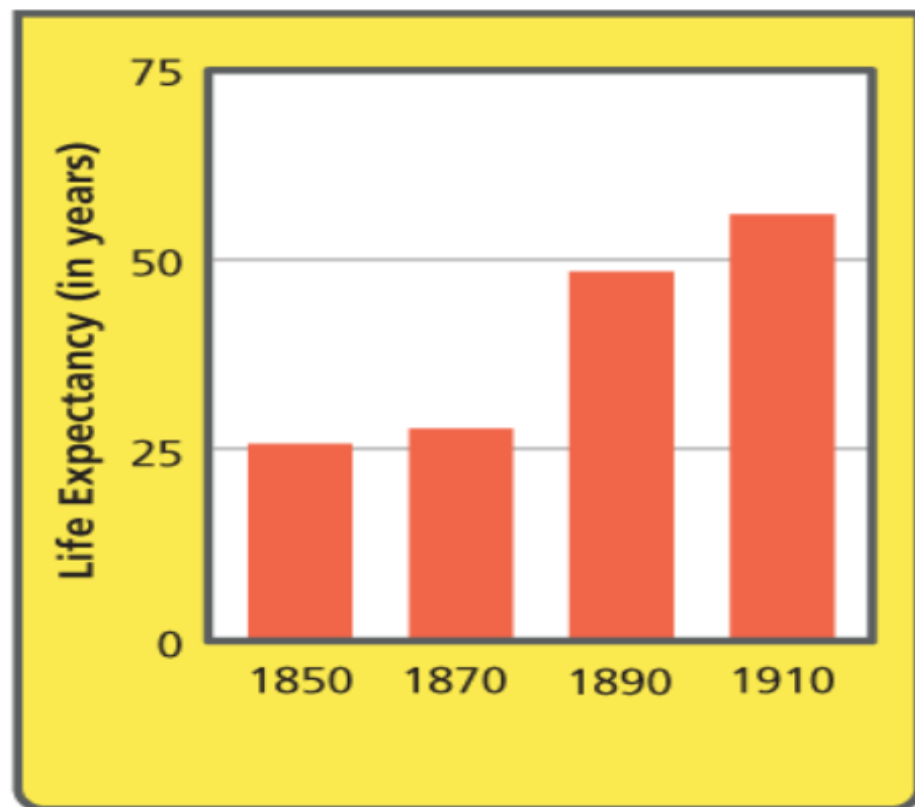


Better Medicine, Nutrition, and Health

Population Growth of Major Cities During the Industrial Revolution



Life Expectancy During the Industrial Revolution

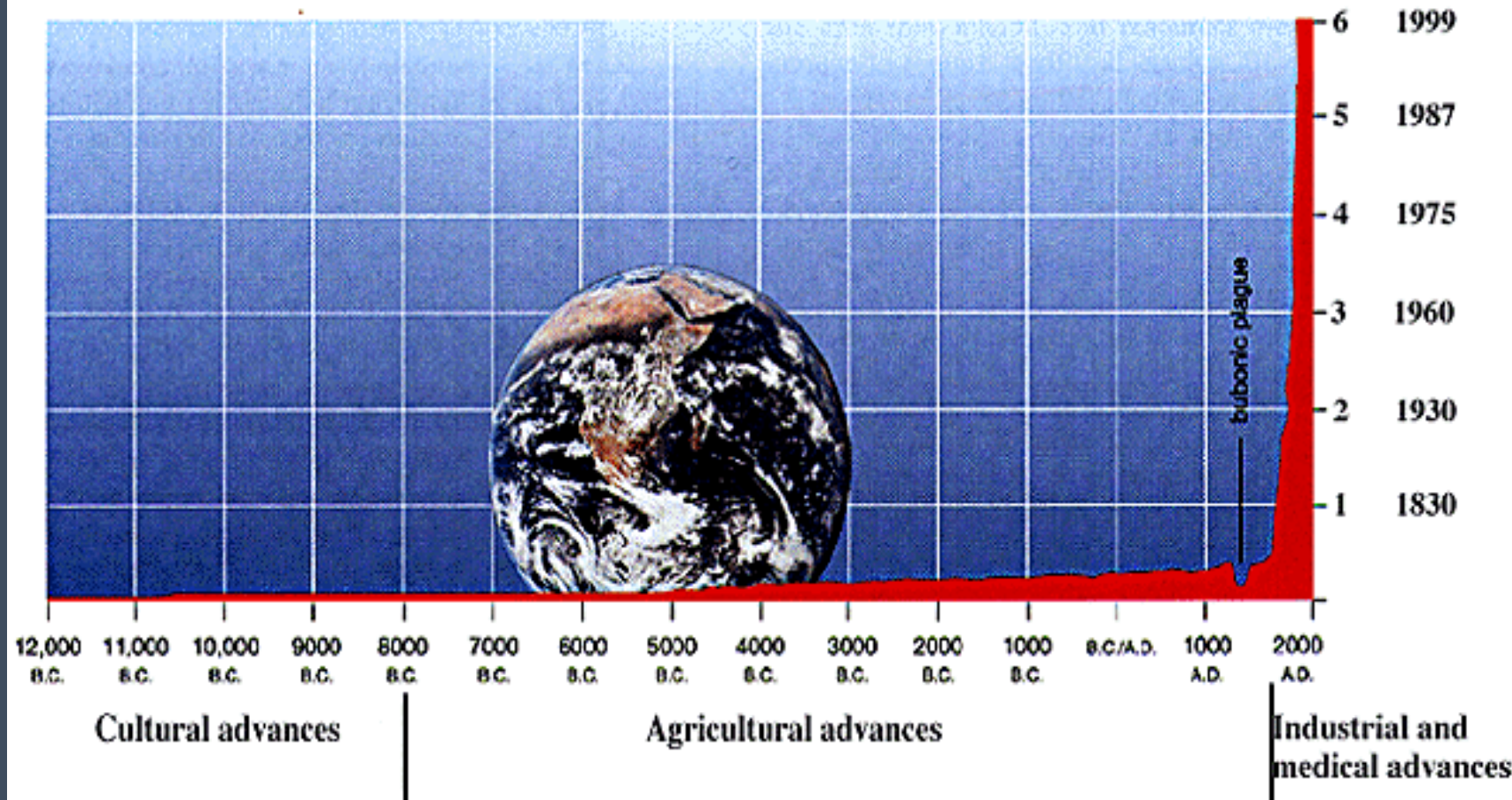
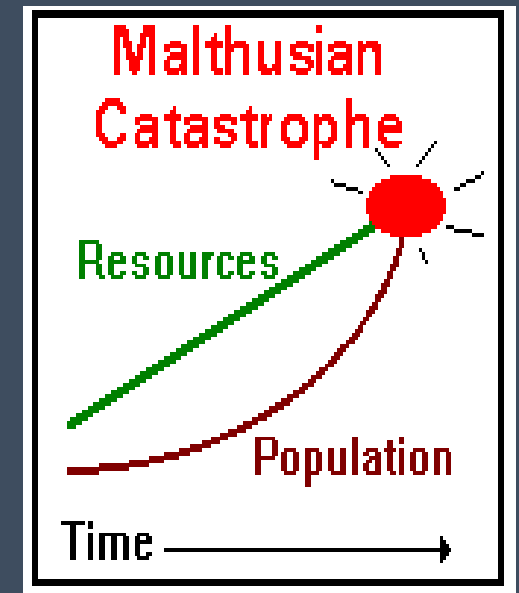


Longer life expectancies contributed to population booms in major cities. Analyze Graphs Which city's population grew the most? How did life expectancy change between 1850 and 1910?

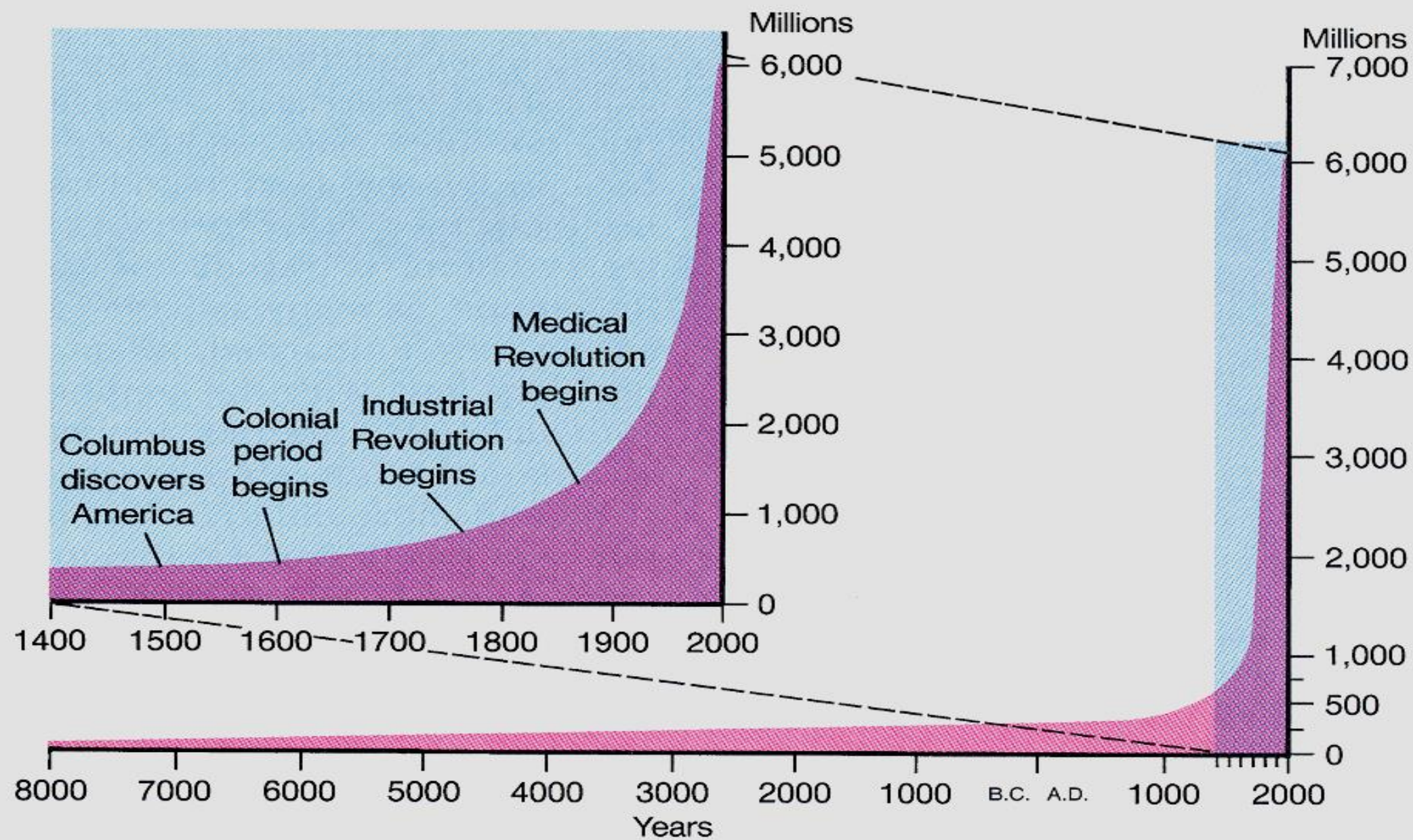
Too many people? Thomas Malthus

- **Theory of Population.** Too many people on earth has catastrophic results.

Historic Human World Population Growth







Meiji Restoration: JAPAN

- Modernization of Japan in 1853.
- REMOVES Tokagawa Shogunate
- Industrialization following model of England.
- NO natural resources in Japan
- Leads to Imperialism by Japan.



Industrial Revolution: Blessing or a Curse???

- POSITIVES:

- NEGATIVES: