

- Essential Question:
 - What factors led to the rise of the American Industrial Revolution from 1870 to 1900?

During the Gilded Age, the United States experienced an industrial revolution



Products manufactured in 20 largest cities

- | | |
|-----------------------------------|------------------------------|
| Clothing | Printing and publishing |
| Flour milling | Textiles |
| Food and beverage processing | Tobacco processing |
| Foundry and machine shop products | Slaughtering and meatpacking |
| Iron and steel | Mixed or other |

Natural resources

- | | |
|----------|---|
| Coal | Oil (petroleum) |
| Copper | Silver |
| Gold | Timber |
| Iron ore | States with 25% or more of employees in manufacturing |

Stacked cannon balls,
possibly a view of an
arsenal yard in
Washington, D.C. (NARA)



The Civil War stimulated mass-production techniques that were used after the war to make industrial goods

Grounds of the destroyed arsenal with scattered shot and shell in Richmond, Virginia, in 1865



The Civil War stimulated mass-production techniques that were used after the war to make industrial goods

Industrial goods like iron, steel, and railroads were needed to rebuild the nation after the war and build America's new cities

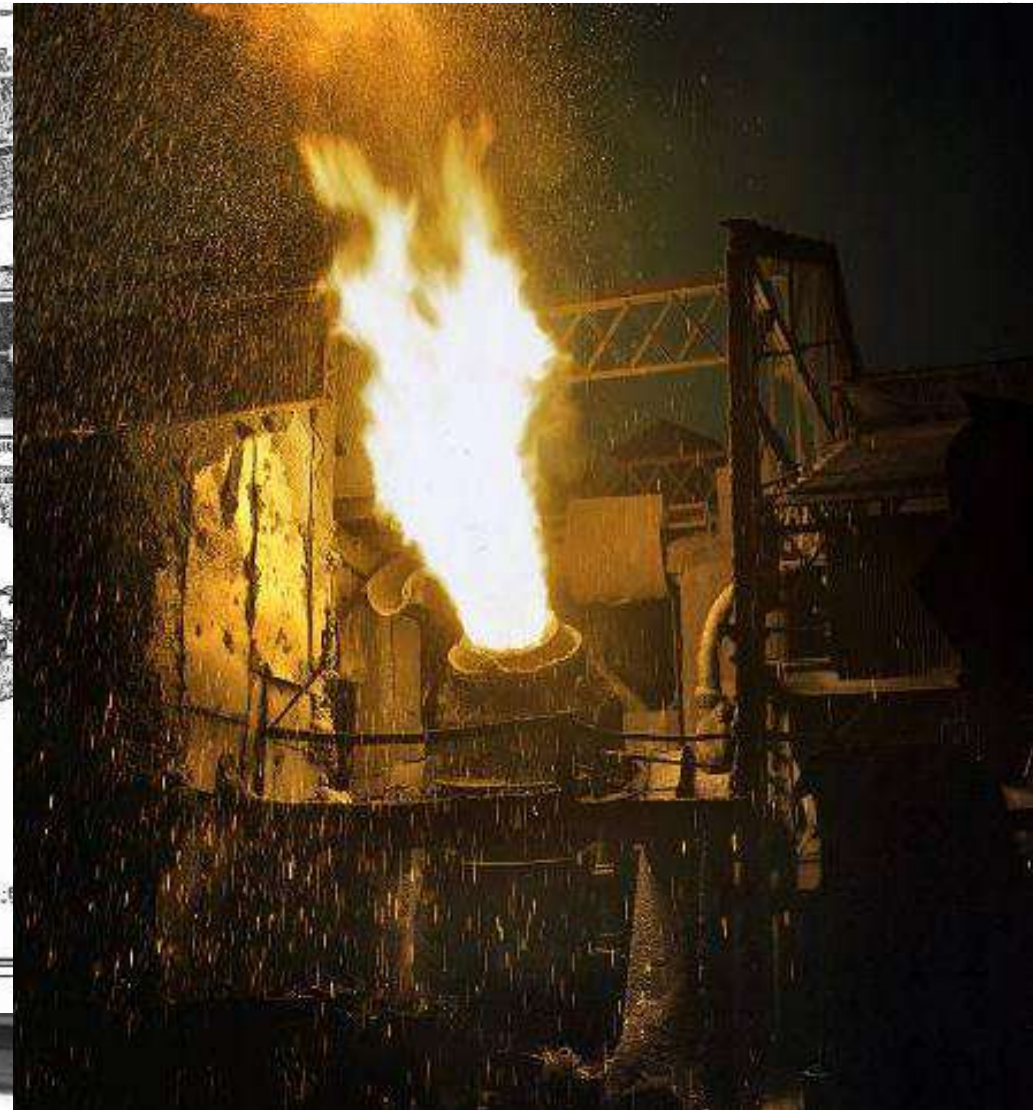
America's industrial revolution began as a wave of inventions

Cash registers, typewriters adding machines, made businesses more efficient

Marconi's wireless transmitter and Bell's telephone revolutionized communication

The Bessemer process created a cheap way to transform iron into stronger, lighter steel

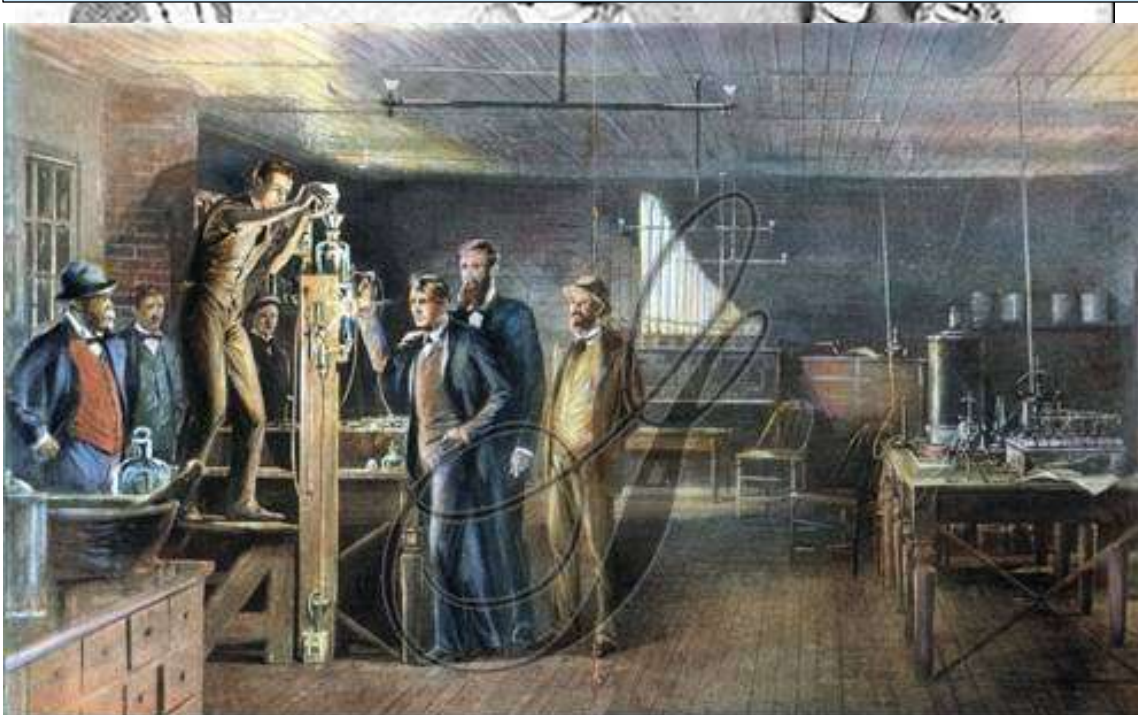
New inventions allowed for improved industrialization



Thomas Edison (the “Wizard of Menlo Park”) was the greatest inventor of the 1800s

In his New York research lab, he invented the 1st _____ ?
_____ ? and _____ ?

His most influential invention was the 1st electric light bulb



Thomas Edison (2.51)





Products manufactured in 20 largest cities

Natural resources

- Clothing
- Flour mill
- Food and beverage
- Foundry and shop products
- Iron and steel
- Mixed or other

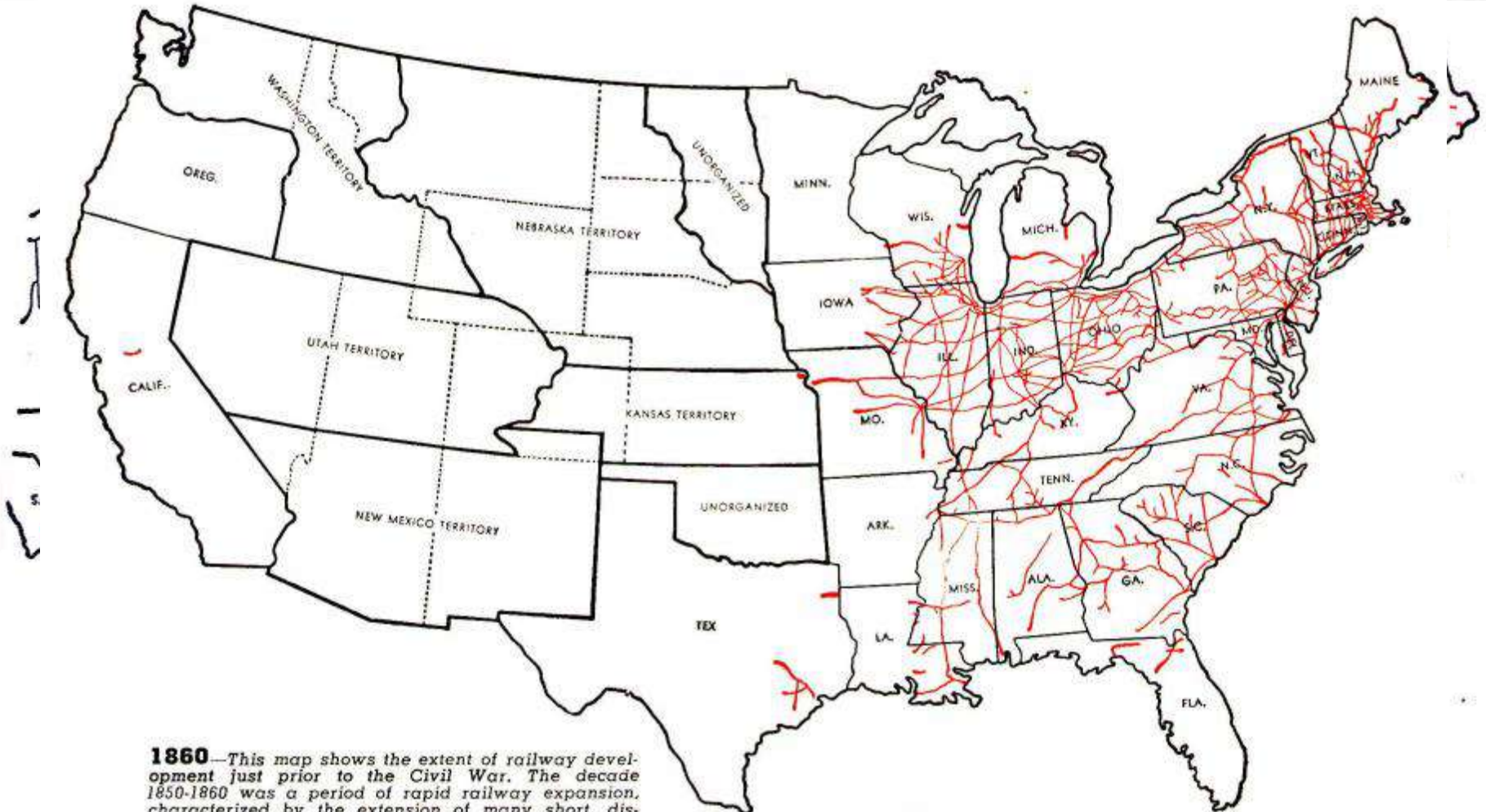
America's industrial revolution was fueled by 4 major industries (R.O.S.E.)
Railroads, Oil, Steel, Electricity

... or more of
 ... employees in manufacturing

The railroad was America's first "big business"

Railroad construction grew in the years before the Civil War...

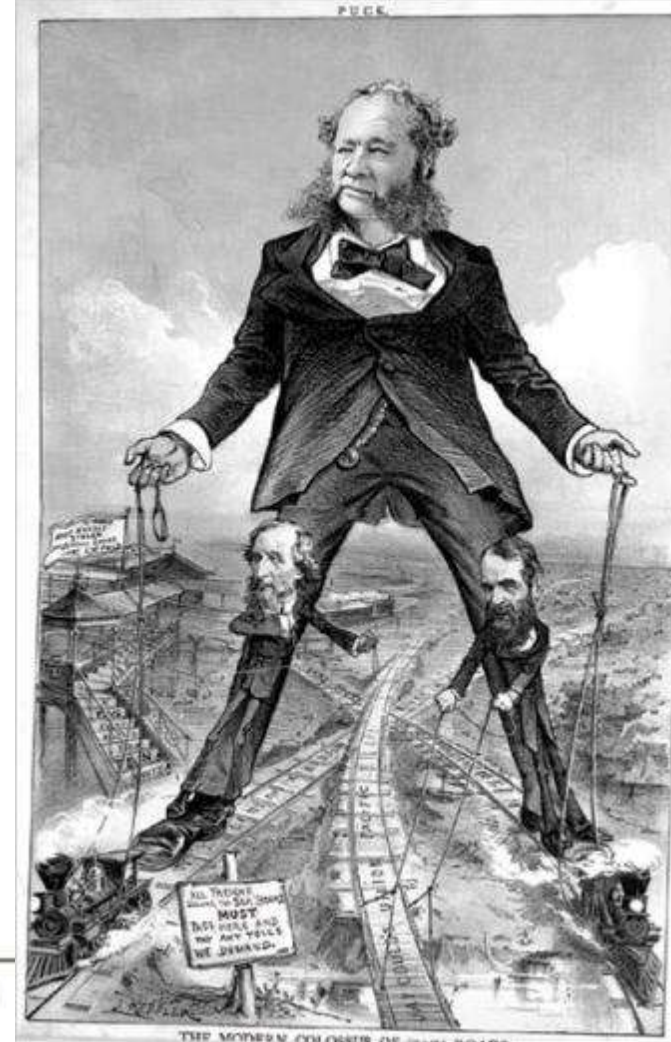
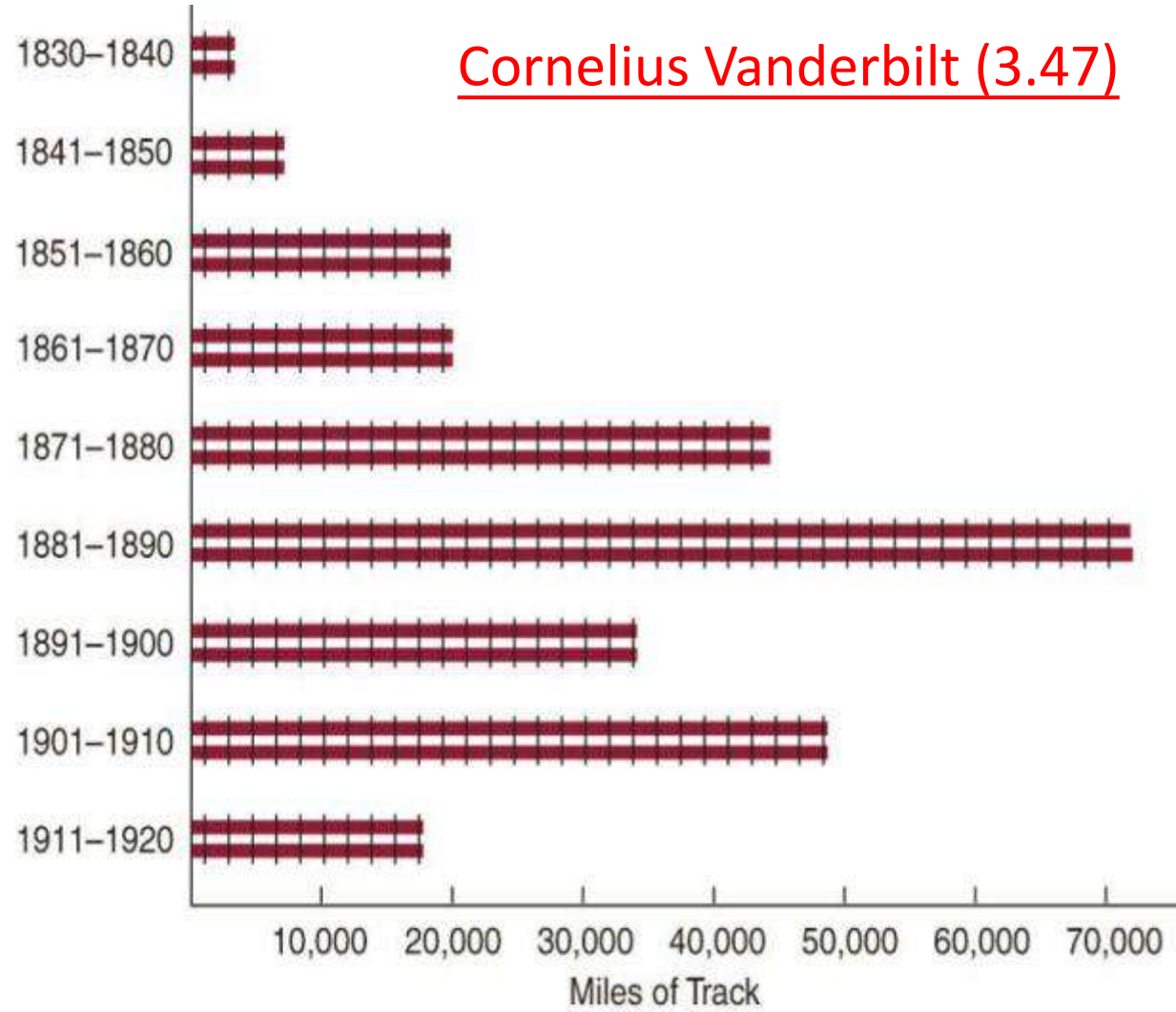
...But, tracks were owned by different companies and were not standardized



During the Gilded Age, railroad construction boomed, led by tycoons like Cornelius Vanderbilt

Large companies bought small railroads, standardized gauges and schedules, and pooled cars

Cornelius Vanderbilt (3.47)



Railroad expansion led to a boom in the economy

Railroads connected the East, South, and West and allowed for national trade and regional specialization

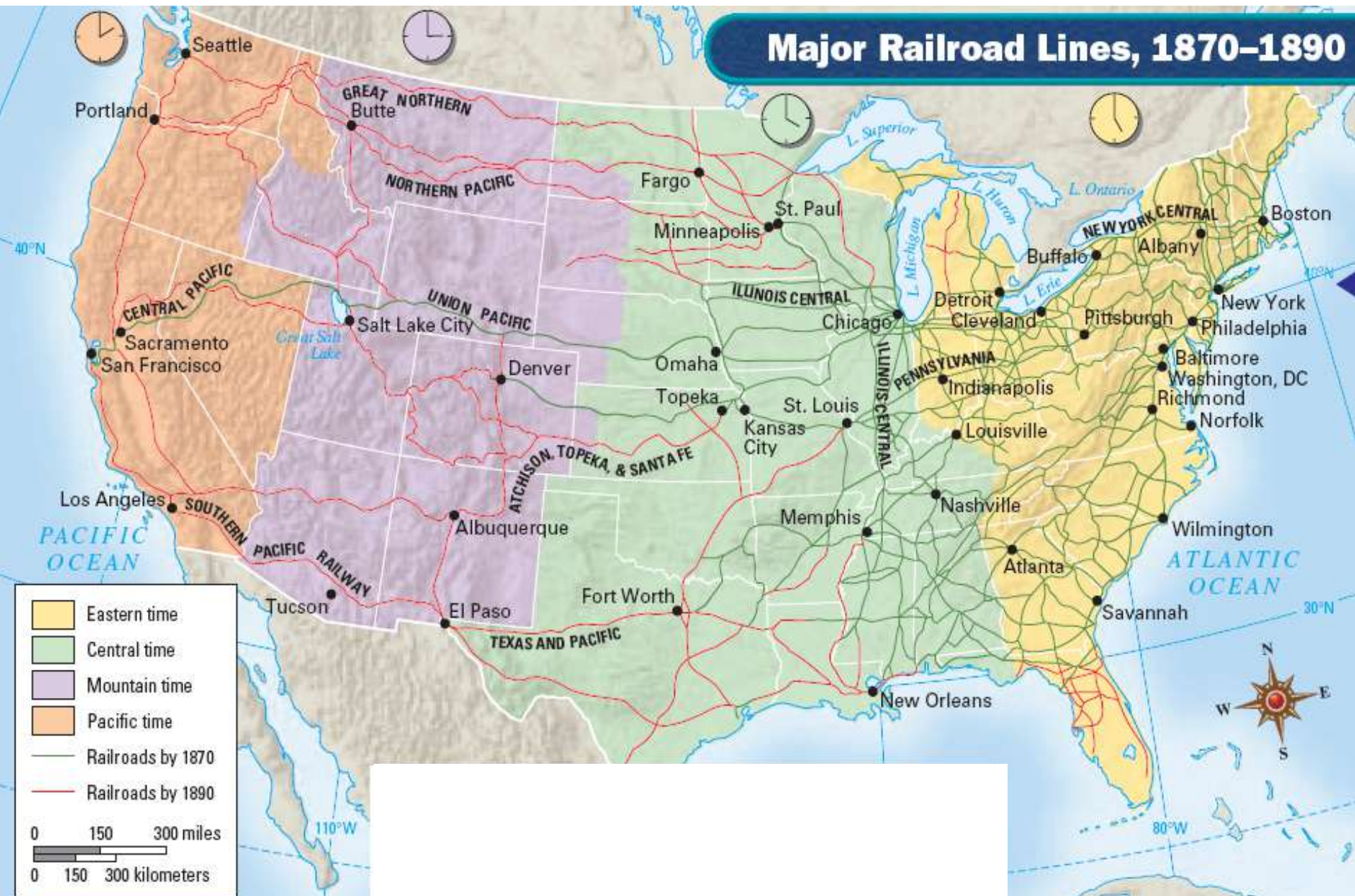


Eastern railroads were connected to the West by 4 great trunk lines

The 1st transcontinental railroad was finished in 1869

Railroads stimulated demand for coal, oil, iron, and steel

Major Railroad Lines, 1870–1890



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Industrialization led to a demand for iron and steel

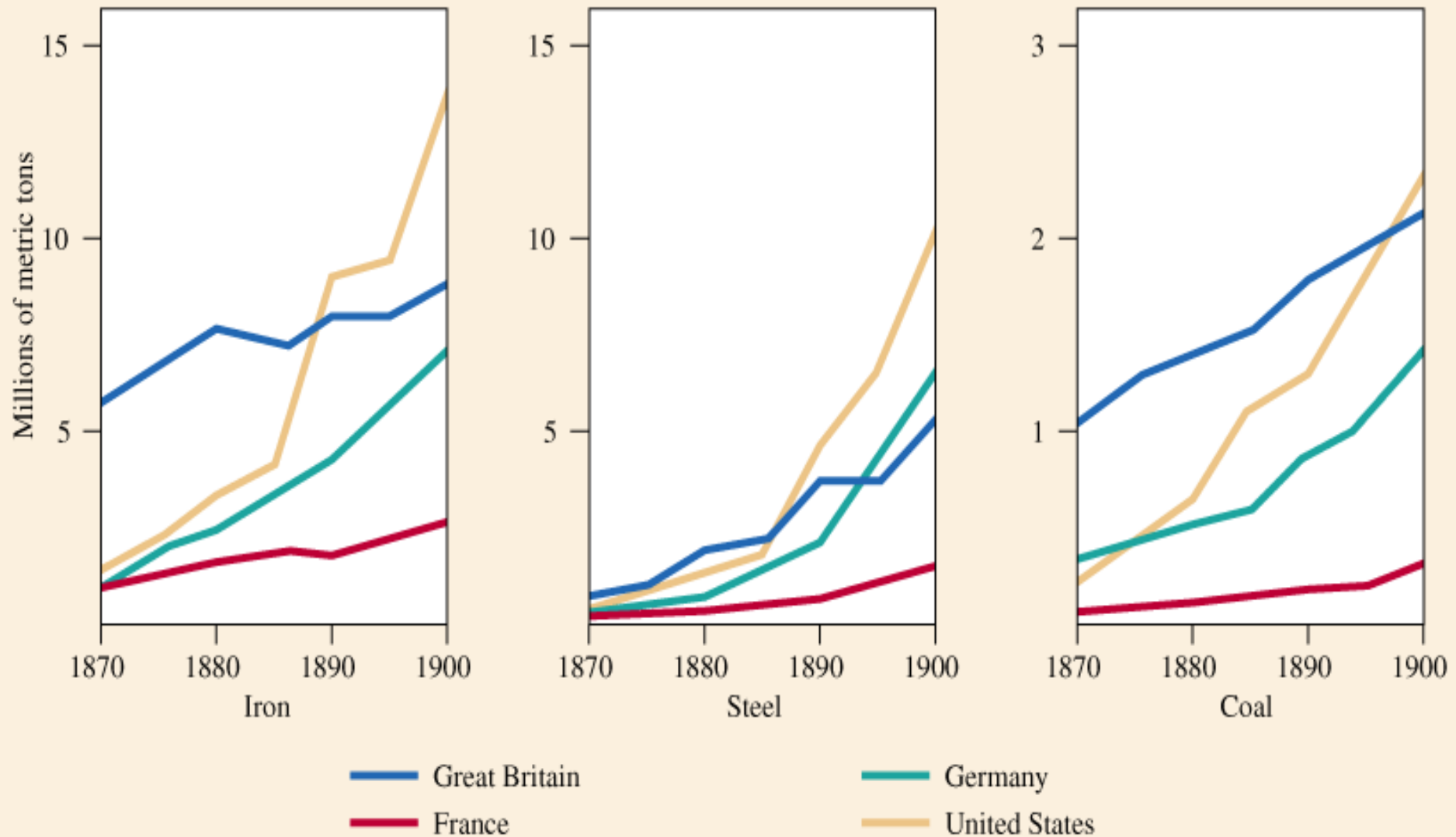


Figure 17.3 Iron, Steel, and Coal Production 1870–1900

Steel led to skyscrapers, longer bridges, stronger railroads, and heavier machinery



THE GREAT EAST RIVER BRIDGE.

To Connect the Cities of New York & Brooklyn.



VIEW LOOKING SOUTHWEST, CITY HALL IN FOREGROUND

WOOLWORTH BUILDING, NEW YORK, CASS GILBERT, F.A.I.A., ARCHITECT

The iron and steel industries were dominated by Andrew Carnegie

Carnegie converted his mills to the Bessemer process and made the highest quality steel at the lowest price

Carnegie Steel Company produced more steel than all the steel factories in Great Britain combined

Carnegie best represented the American dream by rising from poor immigrant to richest man in the world



CARNEGIE

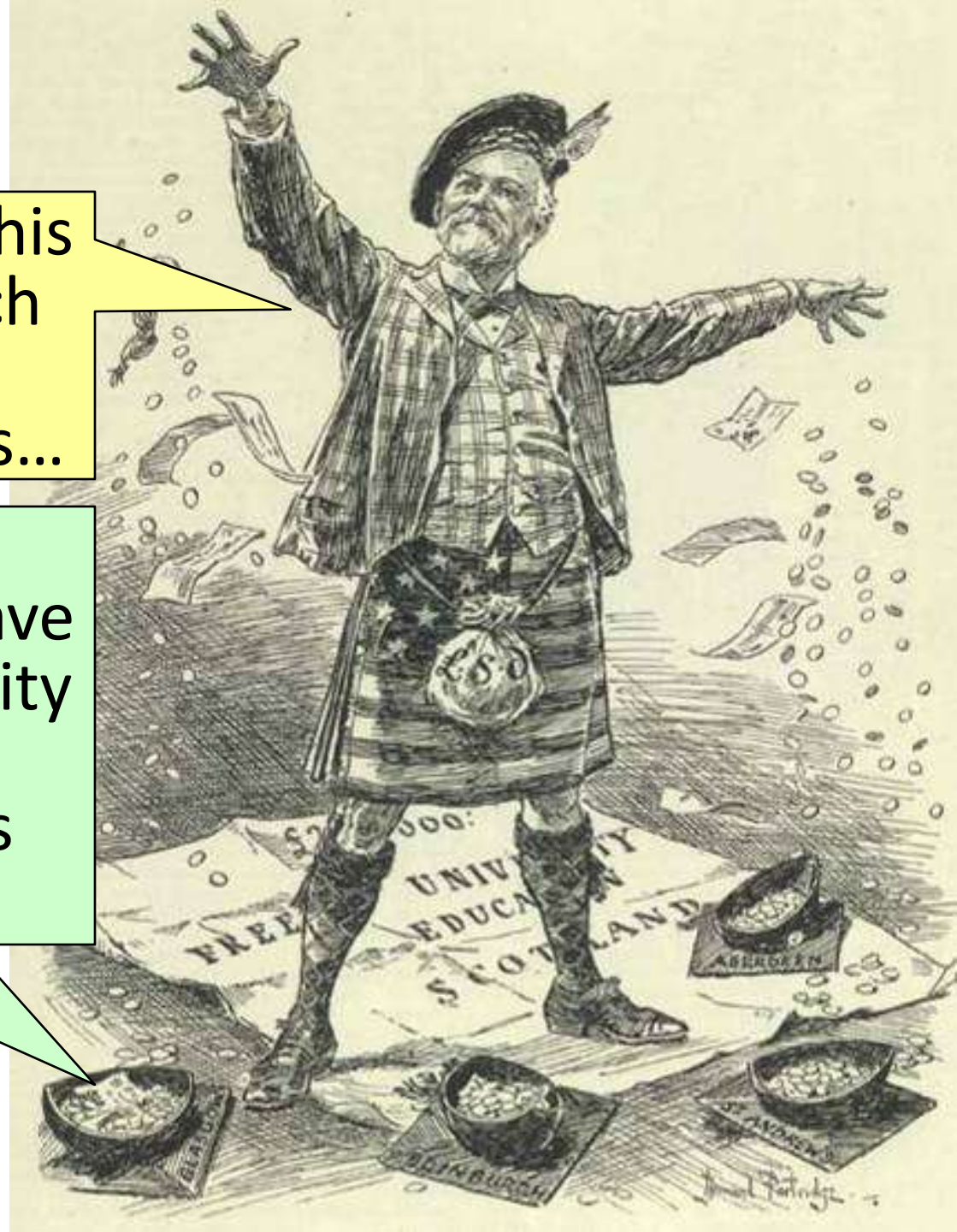
= STEEL CO =



Carnegie did not pay his employees very much and did not allow unions in his factories...

...but he was a philanthropist who gave money to New York City libraries, colleges, and performing arts institutions

Andrew Carnegie (2.11)



Industrialization led to a demand for oil for lubrication and kerosene lighting

The oil industry during the Gilded Age was dominated by John D. Rockefeller's Standard Oil Company

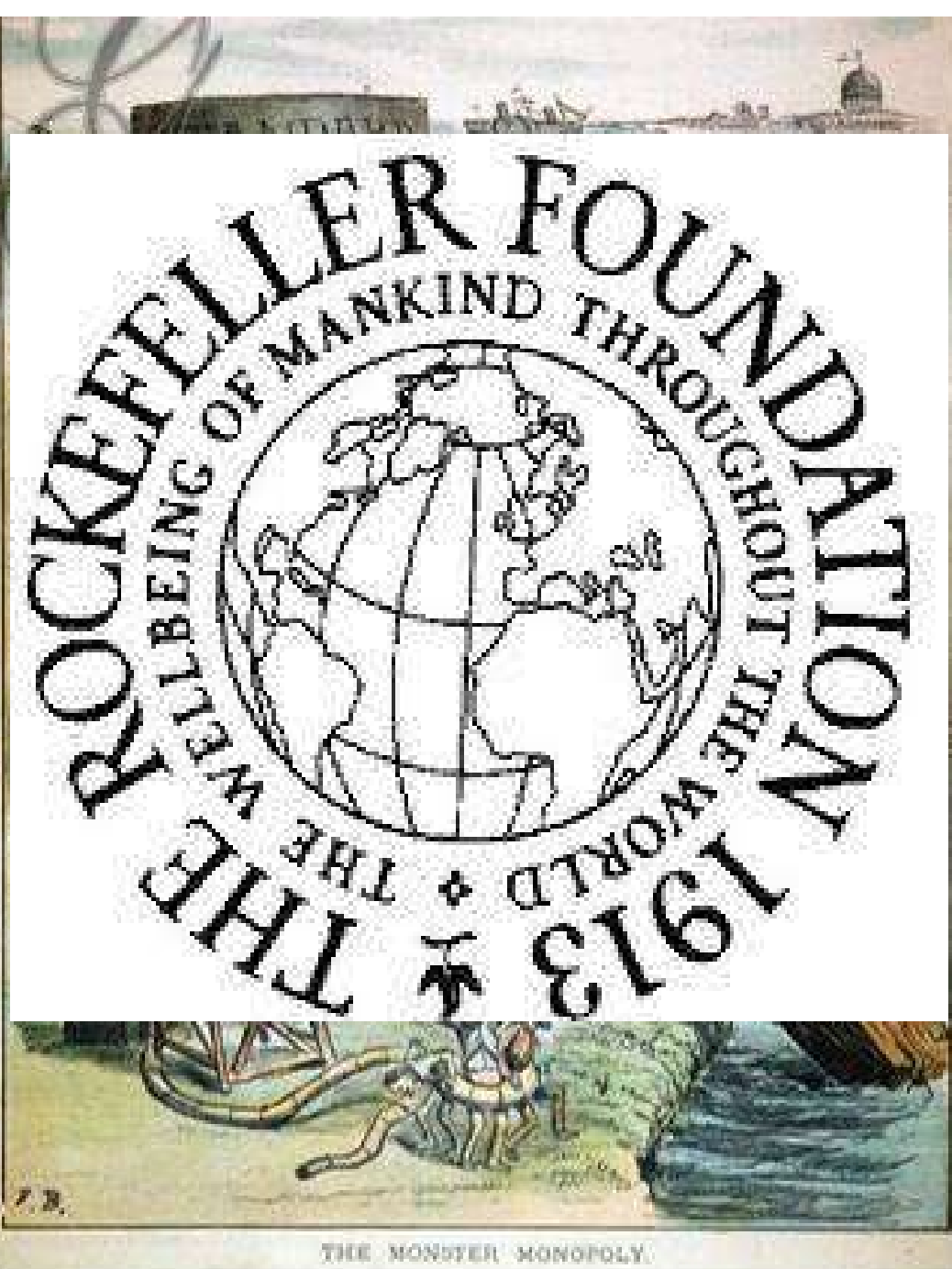
Rockefeller used ruthless tactics to buy out competing companies

Standard Oil lowered costs and improved the quality of its oil products

By 1879, Standard Oil sold 90% of the oil in America

[John D. Rockefeller \(2.51\)](#)





Rockefeller took advantage of his workers and used his fortune to influence the national gov't...

...but Rockefeller gave away \$500 million to charities, created the Rockefeller Foundation, and founded the University of Chicago

THE MONSTER MONOPOLY

Industrialization led to a demand for financing so banking became a significant part of the Gilded Age



American finance was dominated by JP Morgan

He was so influential that he bailed out the railroad industry when companies were in trouble

He helped ease an economic depression during the Panic of 1907

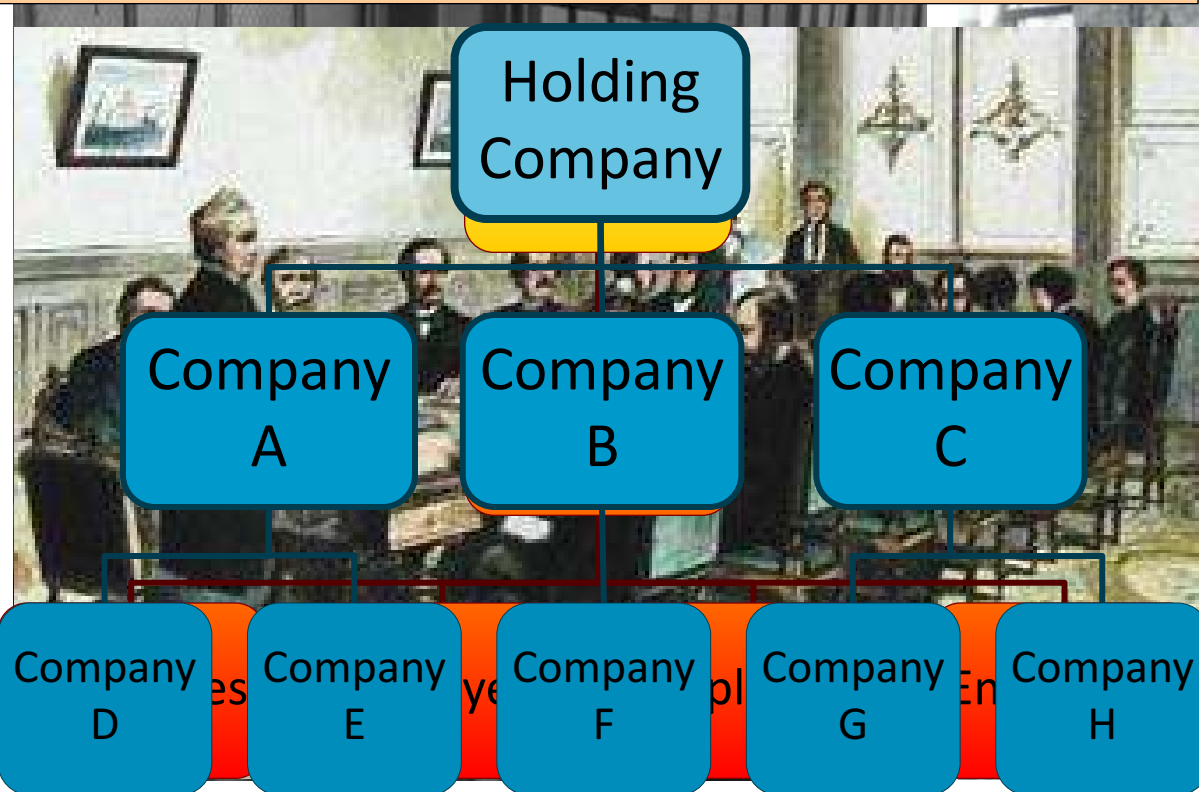
[JP Morgan \(3.08\)](#)

Industrialists like Vanderbilt, Carnegie, Rockefeller changed the way businesses were organized

Businesses hired professional managers to oversee employees, improve efficiency, and manage finances

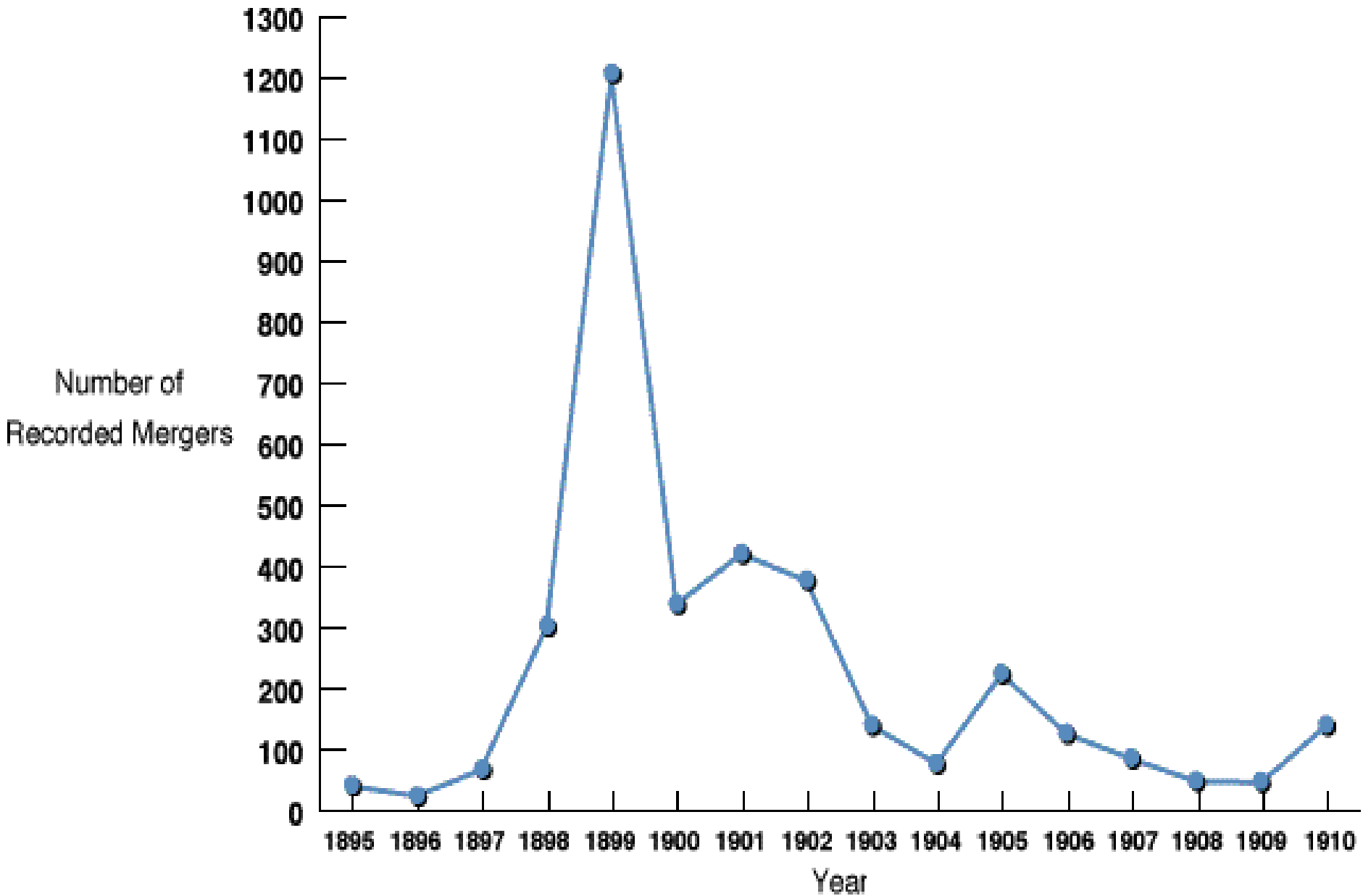
Corporations became a more common business structure

Corporations used boards of trustees (“trusts”) to manage the company...








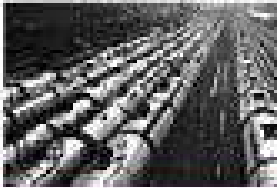
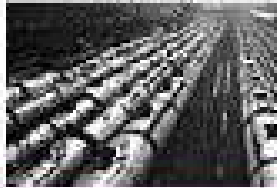
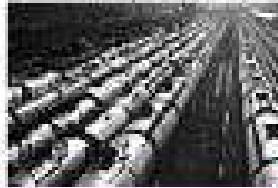








...and holding companies to manage other subsidiary companies

Corporations used mergers to increase profits












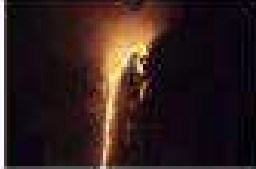






Companies like Standard Oil used horizontal integration to buy similar companies to reduce competition

Horizontal Integration

General Stages of oil production	Companies			
	Company A	Company B	Company C	Company D
Drilling				
Transportation				
Refining	Standard Oil 	Standard Oil 	Standard Oil 	Standard Oil 
Sales & Distribution				

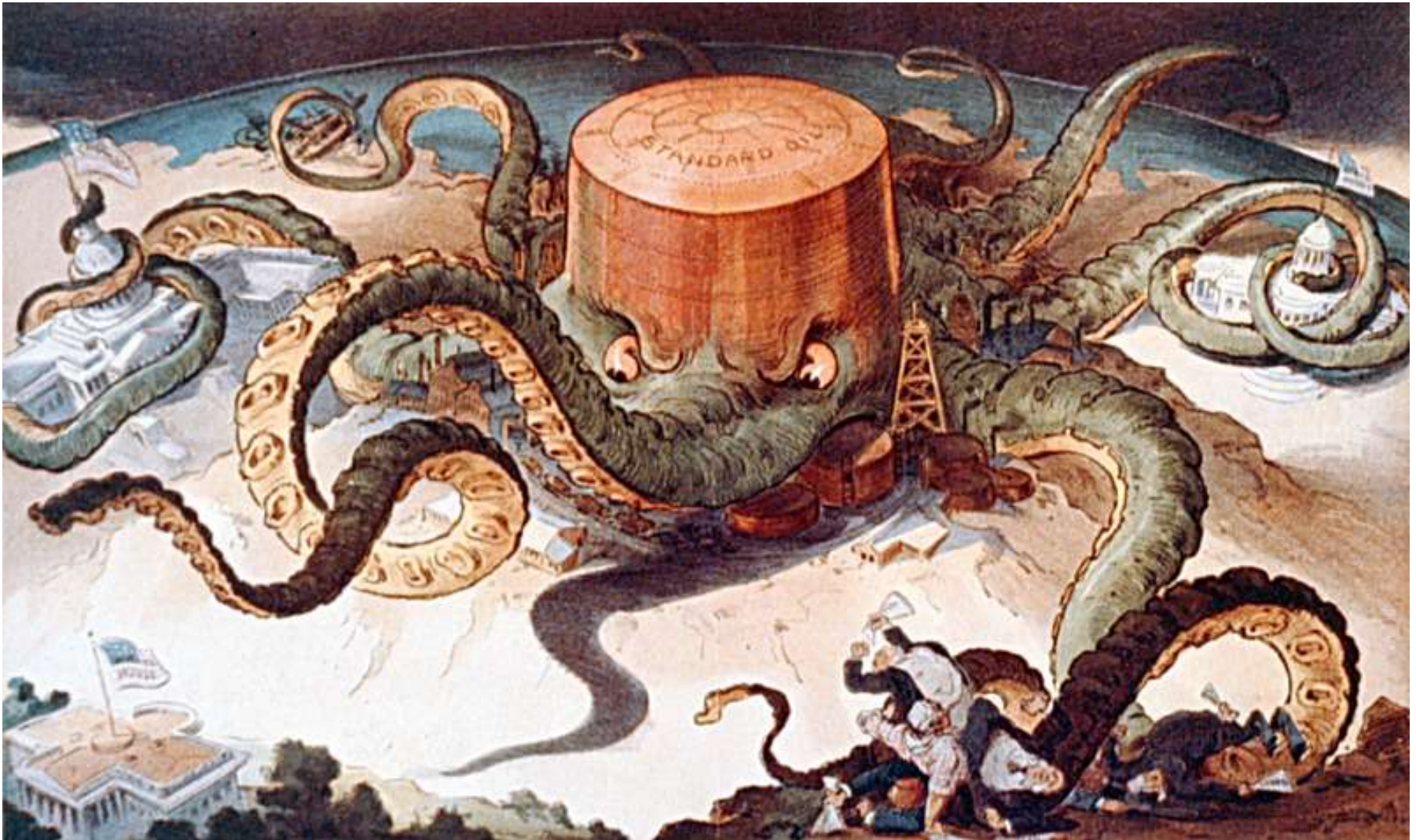
Companies like Carnegie Steel used vertical integration to buy companies in order to gain materials needed to make or deliver their products

Vertical Integration

General Stages of steel production	Companies			
	Company A	Carnegie Steel	Company B	Company C
Mining				
Transportation				
Smelting				
Refining & Rolling				

Corporate mergers led to giant companies called monopolies that controlled the majority of an industry...

Because most monopolies were run by boards of trustees, monopolies became known as “trusts”



Monopolists justified their wealth in a variety of ways

The “Gospel of Wealth” argued that it is God's will for some men to gain great wealth so they could serve the public

Social Darwinism taught that natural competition weeds out the weak and allows the strong to survive



The government used laissez faire policies toward big business...

...the lack of regulation allowed businesses to become very powerful and exploitive

Andrew Carnegie

J Pierpont Morgan

Conclusions

- America was changed by the Industrial Revolution:
 - **The United States led the world in industry, innovation, and wealth**
 - Laissez-faire gov't policies and new business tactics led to monopolies
 - But the gap between the wealthy monopolists and their poor immigrant workers grew wider

Were the industrial capitalists of the Gilded Age
“robber barons” or “captains of industry”?
Weigh their positive and negative effects

