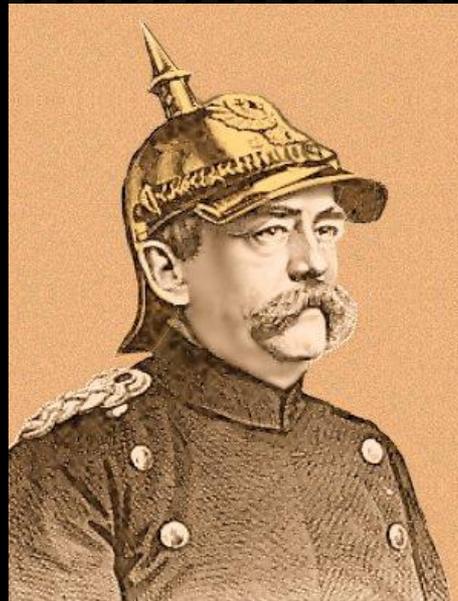
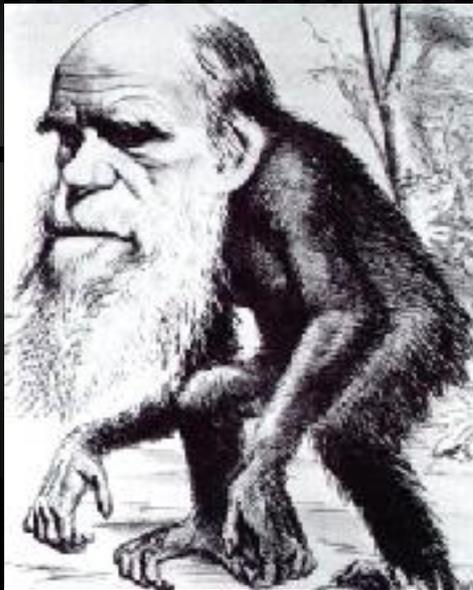


AGE OF NATIONALISM AND REALISM



Continuities and New Directions...



- ✓ Revolutions of 1848 had failed across Europe
- ✓ Authoritarian regimes were back in place by 1850
- ✓ Within 25 years, however, goals of liberals and nationalists were achieved!
- ✓ Those who achieved these goals: conservative practitioners of REALPOLITIK, the politics of reality!

The France of Napoleon III (NIII)

- ✓ Ruled as Emperor from ~~1852~~ 1870
- ✓ After being elected president of the Second Republic, he proved to be a gifted politician who won the favor of the Church and the working class
- ✓ Successfully launched a coup in 1851 that led him to be elected president for 10 year term, and eventually, Emperor Napoleon III a year later!



Napoleon III's Empire

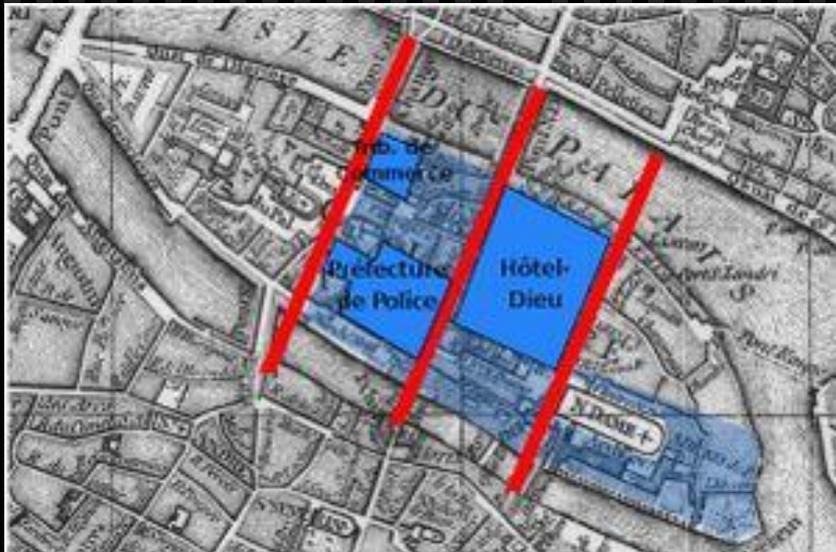
- ✓ An authoritarian regime - NIII controlled army, police, and civil service.
- ✓ His **Legislative Corps** only gave the appearance of representative government, but he controlled laws, war, and budget, so who cared!
- ✓ Concentrated on economic reform in first 5 years
- ✓ Expanded credit (**credit mobilier**) and banking to bolster industrial expansion and took on numerous public works projects.

Rebuilding Paris



- ✓ NIII chose **Baron Haussmann** to modernize the city
- ✓ Redesigned city to have broad streets, underground sewage, public water, gaslights, public squares and plazas...
- ✓ May have looked nice, but served purpose of preventing revolts and facilitating movement of army through the city

Baron Haussmann's Changes



Nappy Changes his tune...

- ✓ By the 1860's, dissatisfaction with NIII's conservative policies grew
- ✓ NIII was sensitive to the wishes of the public, and loosened his control by giving the working class the right to unionize and strike and the legislative corps more say in government
- ✓ By 1870, NIII secured another victory and maintained office, but his foreign policy would do him in...

The Crimean War



- ✓ This was one of NIII's successes
- ✓ He was eager to redeem France as the chief arbiter of Europe.
- ✓ Ottoman Empire, the "Sick Man" of Europe was crumbling. As the Turks loosened their grip, who would take control of the region?
- ✓ NIII wanted to be sure it was FRANCE, though Russia seemed the likely choice - bond of Orthodox Christianity and geographic location were both open doors...
- ✓ Other Euro powers feared this, and had their own interests.
 - ✓ **Austria wanted land in the Balkans**
 - ✓ **GB and France sought ports in the eastern Mediterranean**

The Crimean War



- ✓ War erupted between Turks and Russians in 1853 when Russia demanded rights to defend Christian shrines in Palestine, though this privilege belonged to the French already
- ✓ Turks refused the Russians' demand, prompting Russia to invade and an Ottoman declaration of war on Russia 10/4/1853

The Crimean War



- ✓ By 3/28/1854, GB and France had declared war on Russia but why?
 - ✓ concern for balance of power
 - ✓ national pride of France
 - ✓ competition for resources – GB feared that the Russians would threaten their control of the eastern Mediterranean, making Russia the chief rival of GB for dominance

The Crimean War



- ✓ Russia thought it could count on Austria as an ally, but Austria decided to remain neutral!
- ✓ The war was poorly planned and executed, with many casualties on both sides
- ✓ By 9/1855, however, Russian fortress of Sevastopol fell and **Tsar Alexander II**, only 6 months into his reign, sued for peace
- ✓ **Treaty of Paris 3/1856** forced Russia to give up control of the mouth of the Danube and the Black Sea

The Crimean War



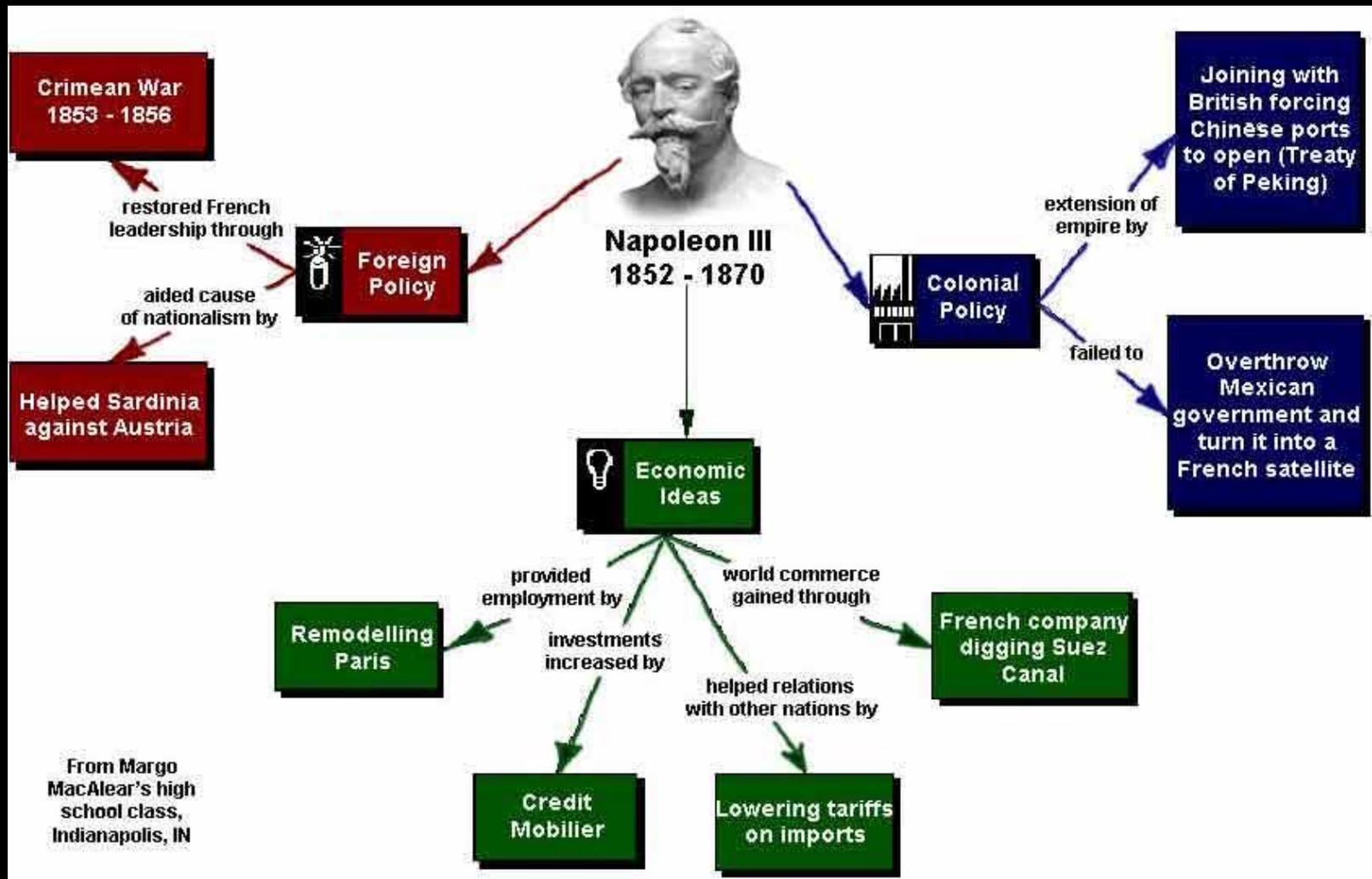
- ✓ Considered the first “modern” conflict
- ✓ 250,000 soldiers died – 60% from disease, especially **cholera**
- ✓ The numbers would have been higher without the efforts of **Florence Nightingale**, who insisted on sanitary conditions
- ✓ Her work inspired many middle class women to pursue nursing as a career

The Crimean War



- ✓ War proved that Concert of Europe was DONE!
- ✓ Long-time allies Russia and Austria now enemies!
- ✓ Loss of men and resources led Russia and GB into time of isolation, while Austria was now all alone without allies.
- ✓ Only NIII seemed to gain prestige from the war
- ✓ Aftermath would open the door for surging wave of nationalism in Italy and Germany

Napoleon III's Legacy



National Unification: Italy and Germany

- ✓ Destruction of Concert of Europe paved the way for nationalist movements in Italy and Germany
- ✓ They pursued “Realpolitik” to strike while the iron was hot
- ✓ The unification of these regions would forever change the landscape of Europe.

Italian Unification



- ✓ Austria still dominated Italian affairs in 1850
- ✓ Earlier attempts to unify looked to **Mazzini's Risorgimento** movement or a confederation run by the pope, but both of these alternatives fell short.
- ✓ The new hope for unification rested with **Piedmont**, a small northern Italian state that seemed to have the army and the will to make unification happen, though in every way it was a David vs. Goliath story

Italian Unification



- ✓ **Piedmont King Charles Albert** had attempted to rebel against the Austrians in 1848, but to no avail
- ✓ New king **Victor Emmanuel II** and his prime minister **Count Camillo de Cavour** breathed new life into the dream of unification in 1849

Italian Unification



Victor Emmanuel II (above) and
Count Camillo di Cavour (first
recorded faux-frohawk in history)



CAVOUR A 24 ANNI
Miniatura del coniugi Romanini (Istituto Mazziniano, Genova).

Italian Unification



- ✓ Cavour was a liberal nobleman who made lots of money in agriculture, and then in banking and railroads.
- ✓ He brought his liberal economic ideas to Piedmont, making it one of the most wealthy states in the region.
- ✓ He used the government revenues to build a large and formidable army

Italian Unification



- ✓ Cavour was aware that this army would still be no match for the Austrians, so he enlisted the help of the French
- ✓ NIII agreed to help as long as their involvement seemed “justified” and they got control of Piedmontese regions of Nice and Savoy.
- ✓ Piedmont was to be extended to include Lombardy, Venetia, Parma, Modena, and part of the Papal States to create the Kingdom of Upper Italy.

Italian Unification



- ✓ 4/1858, fighting broke out as Cavour provoked the Austrians to battle
- ✓ France helped secure initial victories, but then prematurely made peace with the Austrians without telling Cavour!
- ✓ Piedmont received only Lombardy, and Cavour was PISSED.
- ✓ Luckily, however, nationalist movements in Parma, Modena, Tuscany, and part of the Papal states led these regions to join Piedmont!

Italian Unification



- ✓ NIII gave the “ok” to this union in return for control of Nice and Savoy
- ✓ Unification wasn't over, though, as **Giuseppe Garibaldi** brought his Romantic Republican Nationalism to the southern states...
 - ✓ Garibaldi had been part of Mazzini's Young Italy movement
 - ✓ He was part of the 1848 revolts and the 1859 conflict vs. Austria
 - ✓ Cavour saw him as a pain in the butt and sent him to southern Italy to get him out of his hair...

Italian Unification

- ✓ Garibaldi assembled his gang of **Red Shirt** nationalists in southern Italy and successfully took on the Bourbon forces in the Two Sicilies 5/1860
- ✓ From there, he moved onto the mainland and continued right up to the Papal states!
- ✓ Cavour, fearful of provoking France as the defenders of Catholicism, marched to intercept Garibaldi.
- ✓ Garibaldi bowed to Cavour and southern Italy voted to join Piedmont in 1861, under King Victor Emmanuel II
- ✓ Not until the Franco-Prussian war, though, did Italy fully unify in 1871

Italian Unification

Reproduction rights obtainable from
www.CartoonStock.com



Right Leg in the Boot at last.

GARIBALDI: "It'll we'n't go in, Sir, w'y a little more powder."

- ✓ Garibaldi helps secure Italian unification under Victor Emmanuel II
- ✓ The stress of the whole ordeal leads Cavour to a premature death just 3 months later!
- ✓ Austro- and Franco-Prussian wars would seal Italy's fate!

Italian Unification



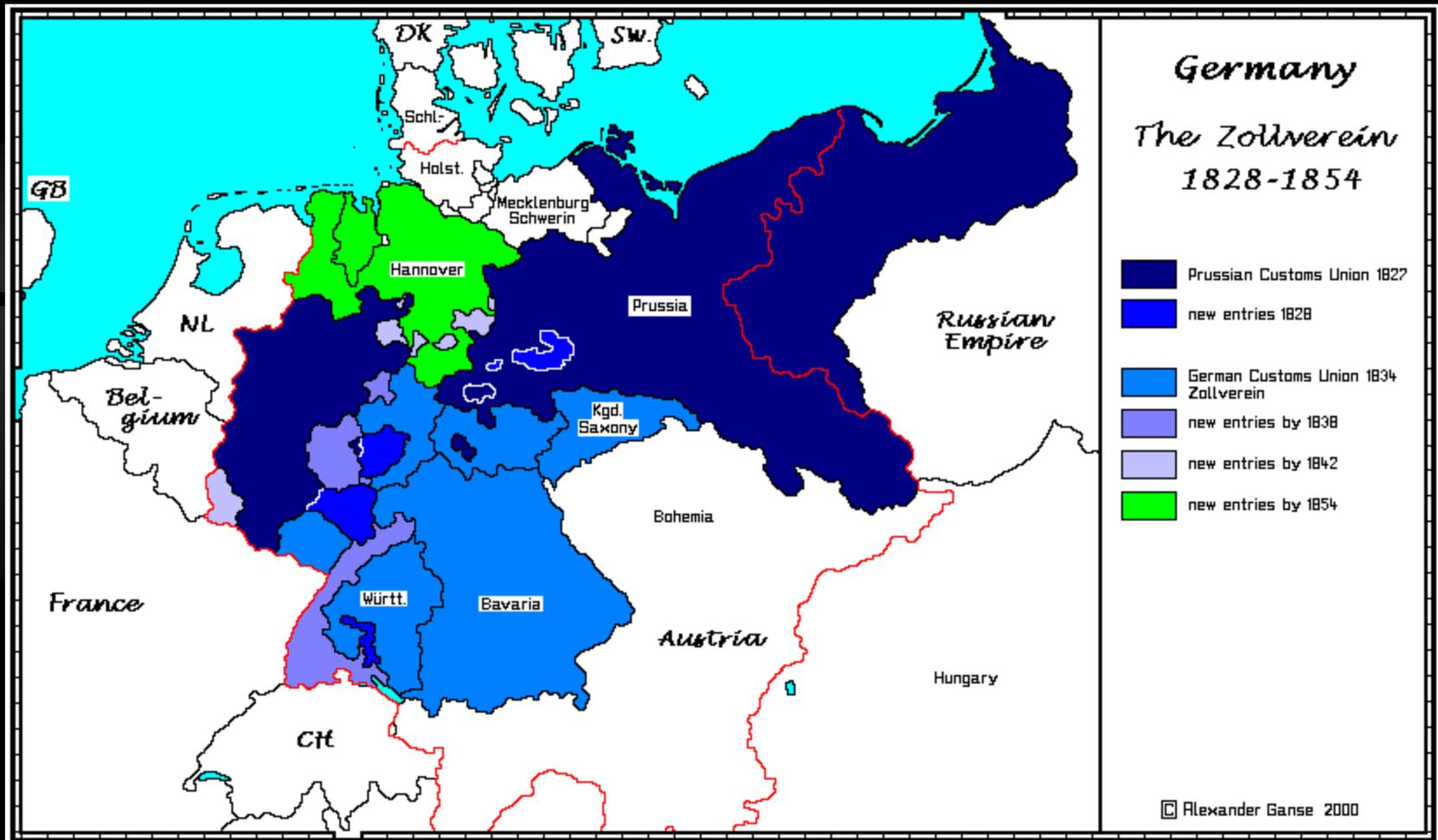
Italy's path to unification; Garibaldi, unifier of southern Italy donning his red shirt

German Unification



- ✓ Frankfurt Assembly had failed to unify Germany in 1848-9
- ✓ Zollverein, German customs union, forged by Prussia and brought prosperity to member states - Austria was excluded from this!
- ✓ Prussia now seen as key to unification

German Unification



German Unification



- ✓ In 1848 Prussia had appeared to become a constitutional monarchy with a bicameral legislature and universal male suffrage
- ✓ The voting system, however, gave the most seats to those who paid the most taxes, and the rising middle class came to dominate the lower house
- ✓ This group wanted a real parliamentary system that the king would answer to, but it hadn't yet come to fruition

German Unification



- ✓ In 1861, King Fred Wm IV died and his brother King William (Wilhelm) I took over, looking to boost power of the army
- ✓ With Albrecht von Roon, minister of war and Helmuth von Moltke, chief of army general staff, William set out to double the size of the army

German Unification



- ✓ Of course, the middle class liberals in parliament opposed this, as they feared it would help the king use the army to control government and rule by decree, and they rejected William's budget proposal to fund military expansion
- ✓ William retaliated by appointing conservative Otto von Bismarck, a member of the junker class
- ✓ Bismarck used **realpolitik** to get what he wanted and needed

German Unification



- ✓ Otto von made a moving speech about Prussia's need for "Iron and Blood" to achieve success in an effort to pass the military spending bill once again, but no luck.
- ✓ Biz went ahead and did it anyway!
- ✓ Biz continued to ignore parliament, whose members were unwilling to revolt so he got away with it!

The Danish War, 1864



- ✓ Arose over duchies of Schleswig and Holstein
- ✓ Danes violated international treaty and incorporated these two areas into Denmark
- ✓ This angered German nationalists as people living in these areas were GERMAN
- ✓ Diet (parliament) of the Germanic Confederation urged its members to kick some Danish butt, BUT Bismarck saw this as caving to the Austrian dominated governing body.

The Danish War, 1864



- ✓ Instead of bowing to the German Diet, Bismarck opted to persuade Austria to join Prussia in declaring war on the Danes on 2/1/1864.
- ✓ The Danes were soon overwhelmed and gave Schleswig and Holstein to the victors.
- ✓ Prussia got Schleswig while Austria got Holstein
- ✓ This settlement would only be temporary, however...

Austro-Prussian War, 1866



- ✓ Bismarck realized that Prussia could only expand its power over the German states at Austria's expense
- ✓ The division of Schleswig and Holstein provided a great opportunity for Bismarck to provoke Austria into a conflict
- ✓ Before this could happen, he had to secure Austrian isolation...

Austro-Prussian War, 1866



- ✓ Bismarck approached Russia to attain a promise of neutrality - no problem after Crimean War and after Prussia had supported harsh Russification in Poland
- ✓ To secure an alliance with France, Biz promised NIII territory in the Rhineland
- ✓ Then, he promised Italian King Victor Emmanuel Austrian-controlled Venetia if Austria were defeated
- ✓ The table was set...!

Austro-Prussian War, 1866

- ✓ Bismarck provoked Austria to war on 6/14/1866 over issues in Schleswig-Holstein
- ✓ Nobody in Europe expected the mighty Austrian army to fall, but the reforms of the Prussian military proved effective
 - ✓ Breech-loading needle gun faster than muzzle-leading gun of Austrians
 - ✓ Better RR system allowed Prussians to mobilize faster
- ✓ Austria decisively beaten at **Battle of Koniggratz 7/3/1866**

Austro-Prussian War, 1866

- ✓ Bismarck didn't enforce a harsh peace settlement on the Austrians, he only insisted they stay OUT of German affairs.
- ✓ Biz gave Italy Venetia as promised, but no other Austrian territory was stripped but Holstein, now controlled by Prussia
- ✓ North German Confederation formed in all German states north of Main River
- ✓ Free cities of Hanover, Hesse-Cassel and Frankfurt were also seized as they had sided with Austria during war
- ✓ Prussia now was the dominant German force!

Franco-Prussian War



- ✓ While Bismarck and William I achieved their goals of unifying all of northern Germany and excluding Austria from German affairs, a problem remained with France
- ✓ France felt increasingly threatened by their newly unified neighbor to the east
- ✓ France sought an opportunity to humiliate their German neighbors, the Prussians

Franco-Prussian War



- ✓ The opportunity came in a succession scuffle in Spain.
- ✓ Queen Isabella II of Spain was deposed during revolution and the throne was offered to Prince Leopold of Hohenzollern-Sigmaringen
- ✓ France was livid over the possibility of being surrounded by Hohenzollerns, and NIII persuaded William I to force Leopold to withdraw from consideration

Franco-Prussian War

- ✓ William sent a telegram to the French ambassador at Ems, formally apologizing for the ordeal, but...
- ✓ Biz got hold of the telegram and “edited” it before it got to the ambassador, making the telegram sound insulting to the French (EMS TELEGRAM)
- ✓ As Biz anticipated, the French took the bait and declared war on Prussia 7/15/1870
- ✓ The North German Confederation and their southern German allies gave the French a serious butt-kicking, marching into France and capturing NIII himself!
- ✓ By 1/1871, it was all over, and France was forced to pay a \$1 billion indemnity and give up Alsace and Lorraine

Franco-Prussian War

- ✓ Bismarck cripples the French with this settlement
- ✓ The French are forced to sign the peace agreement at Versailles at the Hall of Mirrors



Final Chapter in German Unification



- ✓ Before the close of the Franco-Prussian War, the southern German states agreed to join the North German Confederation
- ✓ 1/18/1871 at Versailles, William I was proclaimed **Kaiser** or emperor of the **Second German Empire** (2nd Reich - 1st was HRE)
- ✓ Conservative, militaristic forces in Prussia made a unified Germany a reality, and this new powerhouse ruled the European continent, upsetting the balance of power

German Unification



German Unification



National Building and Reform



- ✓ Beyond the unifications of Germany and Italy, other states were experiencing transformation and change between 1850-1870
- ✓ War, civil war, and changing political alignments were the catalysts of change

Austrian Empire: Toward a Dual Monarchy

- ✓ The Revolutions of 1848-9 may have been crushed in Austria, but changes over the following years would force Austria to confront inevitable trends
- ✓ After 1848, change included...
 - ✓ the emancipation of serfs
 - ✓ end of compulsory labor services
 - ✓ massive industrialization
 - ✓ emergence of an urban proletariat and labor unrest
 - ✓ rise of the industrial middle class

Austrian Empire: Toward a Dual Monarchy

- ✓ In 1851, the revolutionary constitutions were abolished and a **strict**, centralized autocracy was imposed under minister of the interior, Baron **Alexander von Bach**
- ✓ Local privileges gave way to uniform system of law, administration, and taxation implemented by German-speaking officials.
- ✓ Hungary ruled by German-speaking military officers!
- ✓ Catholic Church given control of education
- ✓ 2-house Imperial parliament (*Reichsrat*) was dominated by German speakers
- ✓ **Other nationalities were increasingly alienated**
- ✓ **Von Bach's four "armies":**
 - ✓ *a standing army of soldiers*
 - ✓ *a sitting army of office holders*
 - ✓ *a kneeling army of priests*
 - ✓ *a fawning army of sneaks*

Austrian Empire: Toward a Dual Monarchy

- ✓ The military loss in the Austro-Prussian War rallied fierce nationalist sentiment amongst the Hungarians once again
- ✓ To fend off rebellion, the conservative Austrian gov. negotiated the *Ausgleich* or compromise of 1867, which created the Dual Monarchy of Austria-Hungary
- ✓ Each part had a constitution, bicameral legislature, internal government machinery and capital (Budapest and Vienna)
- ✓ Joining the two states were a single monarch (Francis Joseph), common army, foreign policy, and financial system.
- ✓ This satisfied the Magyars, but what about the rest?

Austrian Empire: Toward a Dual Monarchy



Distribution of Races in Austria-Hungary.

Austrian Empire: Toward a Dual Monarchy



Imperial Russia

- ✓ Russia's defeat in Crimean War revealed its deficiencies next to western powers
- ✓ Tsar Alexander II who came to power 6 months before the end of the war tried to overhaul the system when his father Nicholas I died.



Imperial Russia



- ✓ Serfdom was a huge problem
- ✓ Antiquated system was inefficient and made peasants disgruntled
- ✓ 3/3/1861 Alexander issued **emancipation edict** and “freed” serfs
- ✓ “Emancipation” had its price, however...

Imperial Russia



- ✓ Serfs were given land from government, but they got the worst and least arable parts
- ✓ Peasants couldn't support themselves
- ✓ Peasants also had to "pay" for the land given to them by the government, who had purchased the land from the landlords
- ✓ Peasants had to answer to the *mir* or village commune put in charge of collecting payments for the land
- ✓ The result was unhappy, starving peasants and antiquated farming methods

Imperial Russia



- ✓ Alex also made other reforms such as 1864 establishment of *Zemstovs*
- ✓ These local assemblies were allowed a certain degree of self-government
- ✓ Property requirements limited representatives to wealthier folks, but these governments did succeed in establishing a local court system, judicial code, and equality under the law

Imperial Russia

- ✓ Tsar Alexander unleashed reform-minded forces who demanded more changes to modernize and liberalize Russia
- ✓ Radical writer **Alexander Herzen** was a Russian exile living in GB
- ✓ His slogan, "*Land and Freedom*" emphasized his belief in the importance of peasant reform
- ✓ Wanted to use the peasant village commune approach to running local government
- ✓ Many Russian intellectuals and students embraced this philosophy, known as **populism**

Imperial Russia



DIE,
General
Trepov, DIE!

- ✓ Populism sought to create a new society through revolutionary acts by peasants, but the peasants were too busy starving to get involved!
- ✓ Students/intellectuals resorted to violent acts, such as Vera Zasulich
- ✓ Zasulich shot and wounded the governor-general of St. Petersburg in 1878
- ✓ She was acquitted in her trial by a sympathetic jury
- ✓ Encouraged by Zasulich, other radicals were inspired to act violently...

Imperial Russia

- ✓ Radical group, **The People's Will**, succeeded in assassinating Alexander II in 1881
- ✓ Church of the Savior on Blood (right) commemorates spot where Alex II was assassinated.
- ✓ His son and successor, Alexander III decided reform was a bad idea, and returned to traditional methods of oppression



Great Britain: The Victorian Age



- ✓ Reform Act of 1832 opened door for further demand for reform, as the industrial middle class came to dominate Parliament
- ✓ This had saved GB from revolutionary disturbances that plagued the rest of Europe in 1848.
- ✓ The liberal government managed to make the necessary social and political reforms that allowed GB to remain stable and prosperous

Great Britain: The Victorian Age



- ✓ Economic Growth helped secure stability
- ✓ After 1850, working class finally reaped some of the benefits of industrial wealth
- ✓ Real wages for laborers increased more than 25% from 1850-70, and many soon wanted **voting rights!**
- ✓ This prosperity was illustrated by the complacent demeanor of **Queen Victoria**, GB's longest reigning monarch (1837-1901)

Great Britain: The Victorian Age



Victoria and Albert and fam...and Vicky in her “golden” years

Great Britain: The Victorian Age

- ✓ Politically, things were relatively stable with a few “blips” here and there...
- ✓ Henry John Temple, aka Lord Palmerston served as Prime Minister from 1855-1865
- ✓ He was a Whig (now called Liberal) but not fiercely loyal to his party, choosing instead to make necessary compromises
- ✓ He was NOT in favor of expanding the franchise as it would replace “intelligence and property” with “ignorance and poverty”
- ✓ Orsini affair discredited him (bomb made in GB)

Great Britain: The Victorian Age

- ✓ When Palmerston died in 1865, the push for expanded franchise intensified
- ✓ Interestingly, the Tories (now called Conservatives) pushed legislation through to expand the vote
- ✓ Conservative party leader **Benjamin Disraeli** led the way as he believed this would bring more votes to the conservatives
- ✓ **Reform Act of 1867** lowered monetary requirements on voting and doubled the voting population to include urban male workers

Great Britain: The Victorian Age



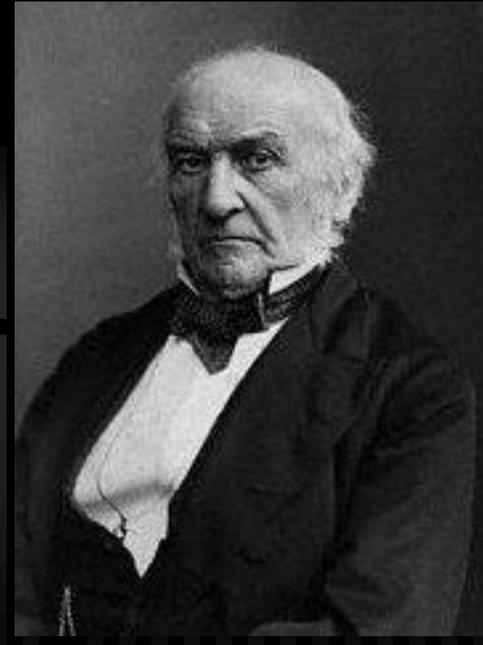
- ✓ Rather than casting their votes for the Conservatives, the newly enfranchised workers voted overwhelmingly for the Liberals in 1868 elections!
- ✓ This event forced party rivalry to intensify as both parties scrapped to win votes and a heated rivalry developed between Disraeli and Gladstone

Great Britain: The Victorian Age



- ✓ 1868 elections also brought Liberal Prime Minister William Gladstone to power, where he ruled from 1868-1874
- ✓ Several liberal reforms were enacted
 - ✓ Civil service positions based on exam performance, not patronage system
 - ✓ Voting by secret ballot introduced
 - ✓ No more purchasing military commissions
 - ✓ Education act of 1870 made elementary education compulsory for all children

Great Britain: The Victorian Age



Lord Palmerston, Benjamin Disraeli, William Gladstone

Meanwhile, in North America...



- ✓ US involved in Civil War
- ✓ Canada gains independence from GB in 1867, with everything separate except foreign affairs

Industrialization and the Marxist Response



- ✓ GB had become industrialized by 1850, but across the European continent, industrialization came of age between 1850-1871
- ✓ On the whole, this was a period of economic prosperity, and growth in domestic and foreign markets

Industrialization and the Marxist Response



- ✓ In the textile industry, power looms began to replace hand looms across the continent, though hand looms still remained in use
- ✓ RR growth was significant: between 1850-1870, RR track mileage increased from 14.5K miles to 70K miles!
- ✓ RR expansion stimulated growth in iron and coal industries
 - ✓ GB dominated Europe in iron production, even as late as 1870
 - ✓ On continent, textile, mining and metallurgy relying increasingly on steam engine

Industrialization and the Marxist Response



- ✓ As a result of expanding markets, barriers to international trade were lifted
 - ✓ Tolls on Danube and Rhine removed
 - ✓ Protective tariffs reduced or eliminated in western Europe
 - ✓ Suez Canal built 1859-1869, linking Mediterranean to Red Sea
- ✓ Governments supported industrial growth, too
 - ✓ Encouraged joint-stock investment banks
 - ✓ No large-scale regulations imposed upon industrialists through 1870

Industrialization and the Marxist Response



- ✓ Spread of industrialization made philosophy behind *Communist Manifesto* much more relevant
 - ✓ Class conflict
 - ✓ Exploitation of the proletariat by the bourgeoisie
 - ✓ Inevitable revolt of proletariat
 - ✓ “Proletarians have nothing to lose but their chains – WORKING MEN OF ALL COUNTRIES, UNITE!”
 - ✓ An INTERNATIONAL movement
- ✓ Worked in London to develop and organize the working class movement, i.e. the “First International” as a world-wide workers’ union

Science and Culture in an Age of Realism



- ✓ Between 1850-1870, two major changes in Europe:
 - ✓ Growth of scientific knowledge
 - ✓ Shift away from Romanticism and its focus on introspection to Realism and its focus on the outer material world

Science and Culture in an Age of Realism



- ✓ Scientific Revolution of the 16th-17th centuries had an impact on the European worldview, but really only reached the educated elite
- ✓ The scientific application of this learning resulted in the technology of the Agricultural and Industrial Revolutions – more practical applications and not pure science
- ✓ It was industrialization that helped instigate a greater interest in pure scientific research

Science and Culture in an Age of Realism



- ✓ Steam engine triggered emergence of new science of thermodynamics – the study of the relationship between heat and mechanical energy
- ✓ Louis Pasteur formulated germ theory, having a major impact on healthcare
- ✓ Mendeleev classified all material elements into periodic chart
- ✓ Faraday discovered electromagnetic induction and built the first generator to lay groundwork for electricity

Science and Culture in an Age of Realism



- ✓ Material gains that resulted from this new science and technology led to a revival of faith in the benefit of science, only this time, this belief was widespread
- ✓ The emphasis on science and logic triggered the development of **materialism**: truth was to be found in the concrete material existence of humans, not feelings and intuition as emphasized by the Romantics.
- ✓ Rise in secularism resulted

Science and Culture in an Age of Realism

Charles Darwin



- ✓ Trained in theology at Cambridge, but cultivated interest in geology and biology
- ✓ At age 22, he was appointed to be a naturalist on the H.M.S. Beagle to explore South America and islands in the South Pacific.
- ✓ Studied animal populations untouched by humans on Galapagos Islands (finches) and concluded that animals evolved over time in response to their environment

Science and Culture in an Age of Realism

Charles Darwin



- ✓ Darwin proposed the idea of **organic evolution** – all plants and animals evolve over a long period of time from earlier and simpler forms of life
- ✓ Influenced by Malthus, he realized that more individuals in a species are born than can survive, and this results in a struggle for existence where those most fit survive and reproduce (natural selection)

Science and Culture in an Age of Realism

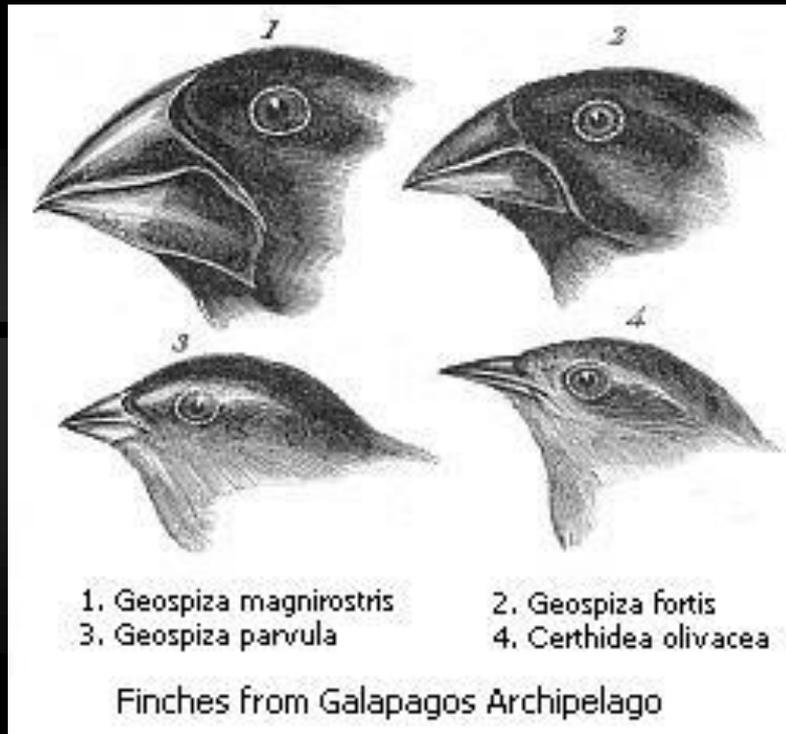
Charles Darwin



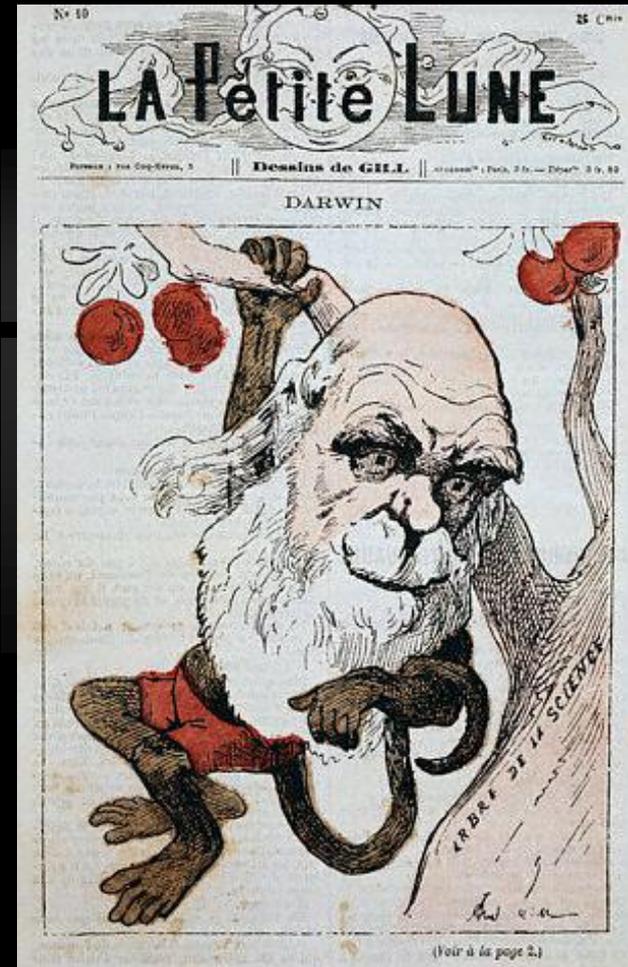
- ✓ Darwin published his work in *On the Origin of Species* in 1859
- ✓ This first work only dealt with animals and plants, but his *Descent of Man* published in 1871 argued that man descended from earlier primates.
- ✓ Darwin's ideas were initially controversial, but as they were embraced by the scientific community, these principles were applied to other aspects of society

Science and Culture in an Age of Realism

Charles Darwin



Darwin's sketches of finch beak variation; cartoon poking fun at Darwin's theories.



Science and Culture in an Age of Realism

Healthcare Revolution



- ✓ The growth of natural science spread to the field of medicine in the 19th century
- ✓ Clinical observation along with the physical examination of patients was combined with detailed knowledge gained from autopsies to improve medical treatment

Science and Culture in an Age of Realism

Louis Pasteur



- ✓ Proved that microorganisms triggered fermentation
- ✓ Established new field called bacteriology
- ✓ Developed process of heating wine to kill deadly microorganisms called pasteurization in 1863
- ✓ Created the first-ever vaccination against rabies in 1885, and later did the same for diphtheria, typhoid fever, cholera, and plague!

Science and Culture in an Age of Realism

Surgical Practices



- ✓ Surgeons were already an established profession, but the advent of germ theory and anesthesia revolutionized surgical practices
 - ✓ To curb post-operation infected, carbolic acid was used to kill bacteria causing the infection – bye bye gangrene!
 - ✓ To reduce the pain of surgery, effective anesthesia in the form of ether (1846) and then chloroform (1847) was utilized instead of alcohol and opiates.

Science and Culture in an Age of Realism

Public Health



- ✓ New emphasis was on PREVENTATIVE rather than CURATIVE medicine
- ✓ Industrialization, urbanization and the cholera epidemic prompted the urban public health movement of the 1840s and 1850s
- ✓ Initially, the movement focused on providing clean water, adequate sewage disposal, and less crowded housing
- ✓ Development of bacteriology prompted pasteurization of milk, water purification, immunization and control of waterborne diseases
- ✓ Medical doctors were hired by the government to treat people and to tackle public health issues

Science and Culture in an Age of Realism

New Medical Schools



- ✓ Growth of medical field and knowledge revolutionized the training of doctors
- ✓ Apprenticeship was replaced with the growth of formal medical schools with uniform standards
- ✓ Professional medical organizations established and enforced professional standards for doctors and for doctor training
- ✓ Johns Hopkins University School of Medicine (1893) created a new model for medical training that became standard practice in the 20th century

Science and Culture in an Age of Realism

New Medical Schools



- ✓ Women were initially barred from entering medical school but eventually were granted degrees, like Elizabeth Blackwell in 1849
- ✓ Even with degrees, women were often denied licenses and refused membership in medical societies or employment
- ✓ Women were not granted full membership in the AMA until 1915

Science and Culture in an Age of Realism

Scientific Study of Society



- ✓ Scientific approach came to be applied to human society
- ✓ Auguste Comte's philosophy of **positivism** created a hierarchy of all sciences that could be used to understand humanity – at the top was sociology, the science of human society
- ✓ Comte tried to analyze human interaction to develop general laws of society to explain human behavior

Science and Culture in an Age of Realism

Emergence of Realism



- ✓ Realism emerged in 1850 to describe both a style of painting and a type of literature
- ✓ Realism was the belief that the world should be portrayed and viewed realistically – as it is.

Science and Culture in an Age of Realism

Realism in Literature



- ✓ Realists rejected romantic heroes and exotic settings in order to portray ordinary people and places
 - ✓ Flaubert's *Madame Bovary*
 - ✓ Thackeray's *Vanity Fair: A Novel Without a Hero*
 - ✓ Dickens' realistic portrayals of urban squalor

Science and Culture in an Age of Realism

Realism in Art



- ✓ Parallel development of Romanticism and Neoclassicism in art displaced by the Realism after 1850
- ✓ While earlier styles survived, realism dominated, and the French led the way.

Science and Culture in an Age of Realism

Realism in Art



- ✓ Gustave Courbet defined realism, “I have never seen either angels or goddesses, so I am not interested in painting them.”
- ✓ Some critics called realism the “cult of ugliness” but Courbet didn’t find what was real to be ugly at all

Science and Culture in an Age of Realism

Courbet's *Stonebreakers*



Science and Culture in an Age of Realism

Realism in Art



- ✓ Jean-Francois Millet preserved certain aspects of Romanticism in his depictions of rural life.
- ✓ His paintings depicted everyday humans in a symbiotic relationship with nature

Science and Culture in an Age of Realism

Millet's *The Gleaners*



Science and Culture in an Age of Realism

Music: Twilight of Romanticism



- ✓ While painting and literature embraced Realism, music continued to uphold the principles of Romanticism
- ✓ Later Romantic music of the New German School emphasized emotional content and the use of music to express literary and pictorial ideas

Science and Culture in an Age of Realism

Music: Franz Liszt



- ✓ Hungarian-born composer epitomized New German School
- ✓ By age 12, he was an accomplished musical performer and was eventually considered the greatest pianist of his time
- ✓ Introduced the concept of the modern piano recital
- ✓ Created the symphonic poem – using music to tell a story and convey a pictorial idea
 - ✓ Liebstraum No. 3 in A flat 🔔
 - ✓ La campanella 🔔

Science and Culture in an Age of Realism

Music: Richard Wagner



- ✓ Son-in-law of Liszt
- ✓ Realized German desire for national opera, playing upon Romantic nationalism in the German states
- ✓ Used music as nationalist propaganda – his writing also reflected his interest in the movement for national unification
- ✓ Transformed opera into *Gesamtkunstwerk* (total art work), which blended all aspects of the performance into a harmonious whole – no divisions or recitative, opting instead for a recurring musical theme called a leitmotiv, which blended human voice with a recurring orchestral line
- ✓ *The Ring* probably his most famous 4-part opera that drew upon ancient German epic tales.
 - ✓ *Ride of the Valkyries* from *Die Walkure* (pt. 2 of ring)
 - ✓ *Bridal Chorus from Lohengrin*

Science and Culture in an Age of Realism

Music: Brahms



- ✓ Rival of Wagner
- ✓ Affiliated with Leipzig Conservatoire which had been founded by Felix Mendelssohn and opposed ideas of the so-called New German School
- ✓ Conservative romanticism
- ✓ Intermezzo in A 🎧