

The Cold War 1946-1991



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The Cold War

- > 40 year long confrontation between U.S. and Soviet Union after WWII
- represented very different systems
 - democracy, capitalism (U.S.)
 - totalitarianism, communism (USSR)
- no direct war between the two sides
 - “wars” waged on political, economic, cultural fronts
- real wars fought elsewhere
 - Vietnam, Central America, Africa, Middle East
- fostered pervasive “fear of communism” in America
 - Reflected in movies, literature, art, politics

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Origins of the Cold War

- After WWII, question of who would control Europe
- At Potsdam conference in July 1945, the three big powers met
- Decided that Germany
 - would pay reparations to victors
 - would be divided up

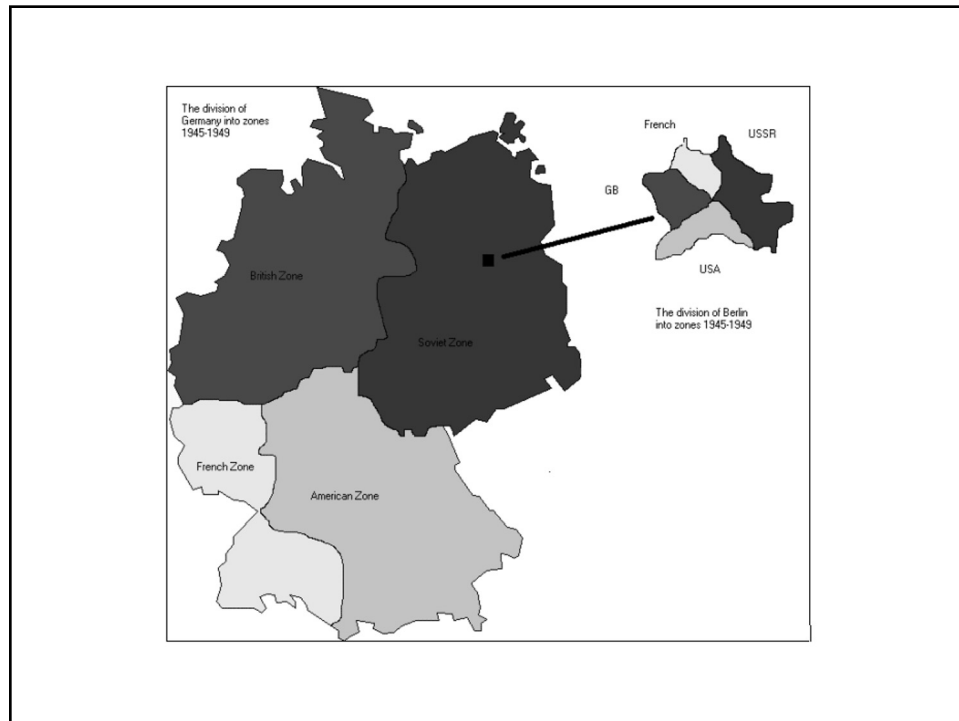


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Partition of Germany

- Germany divided into four zones
 - British, American, French, Soviet
- Berlin (capital) also divided into four zones

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Rise of Two Superpowers

- Old colonial powers (Britain, France) weakened by war
- Rise of two new powers:
 - United States
 - Union of Soviet Socialist Republics (USSR)
 - Russia + Ukraine + other republics
 - also, the Soviet Union

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Goals of the Superpowers

- Both U.S. and USSR had political goals
 - USSR wanted security on western borders
 - U.S. wanted to stop Communism



Terrestrial Gains of the USSR. With the goal of creating a buffer zone of protection, the Soviet Union gained control of territory in eastern Europe. The "Iron Curtain" refers to the post-World War II boundaries that separated capitalist from communist states.

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These Goals Conflicted

- Britain, U.S. demanded free elections in eastern Europe
- Soviets rejected, did not want anti-Soviet governments
 - was this a legitimate security issue?
 - or was this deliberate expansion?
- Communist parties were very popular in Europe after the war
 - why?
- By late 1940s, Soviets established "friendly" Communist governments in eastern Europe

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The division of Germany into zones 1945-1949

The division of Berlin into zones 1945-1949

Partition of Germany

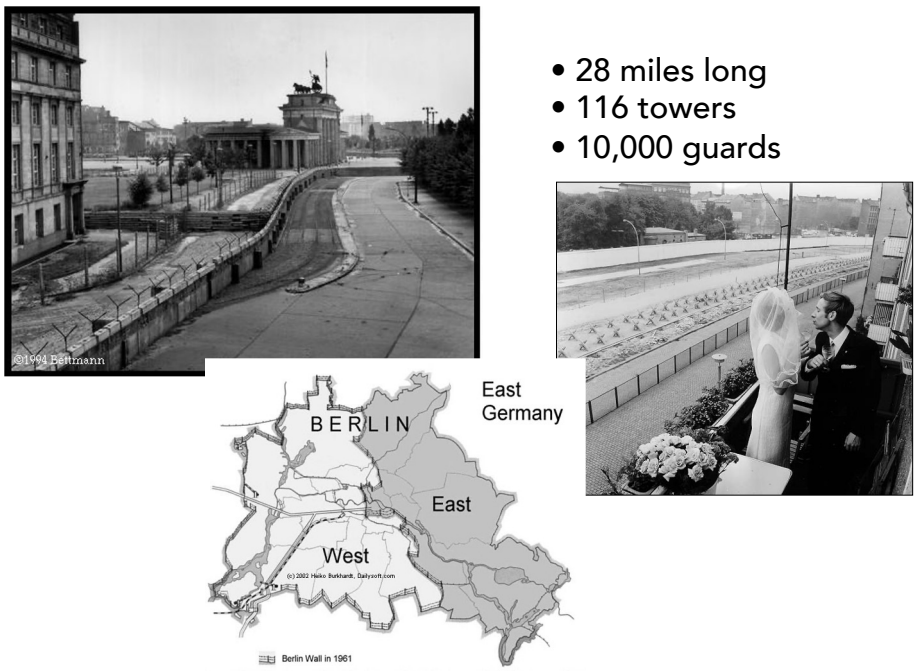
- in 1949, divided into East Germany and West Germany
 - West Germany (capitalist, democratic)
 - East Germany (communist, totalitarian)

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The Berlin Wall

- Greatest symbol of division of 'East' and 'West'
- In 1950s, East German government began to restrict movement to West Germany
 - Still, 3.5 million East Germans left to go West
 - Many used Berlin as a 'gateway'
- In 1961, Soviets built a wall around West Berlin

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- 28 miles long
- 116 towers
- 10,000 guards

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BERLIN

East Germany

East

West

Berlin Wall in 1961

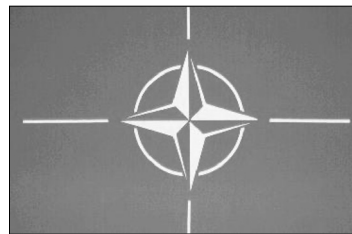
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Separate Military Alliances

- Western European countries formed North Atlantic Treaty Organization (**NATO**) in 1949
- Eastern European countries formed **Warsaw Pact** (1955)
- Europe divided into "alliances"



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Nuclear Arms Race

- U.S. government initiates Manhattan Project during World War II to fight the Nazis/Japan
- First secret test in July 1945 at Alamogordo, New Mexico
 - “Trinity”
- Then, in August 1945, U.S. drops 2 bombs over Japan
 - ‘Little Boy’ and ‘Fat Man’
 - A way to end the war?
 - Or a signal to the Soviet Union?



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Nuclear Arms Race (contd.)

- U.S. holds atomic monopoly until....?
 - 1949: Soviet Union explodes atomic bomb
 - Design based on documents smuggled from Manhattan Project
- Mass scare in the U.S.
- But Soviet Union still has no way to deliver the bomb
- The race heats up
 - Race to develop ‘hydrogen bomb’ (thermonuclear weapons, based on nuclear fusion)
 - U.S. explodes in 1952
 - Soviets explode in 1953
 - They build first deliverable H-bomb
- In 1961, Soviets explode “Tsar Bomba” – the most power nuclear weapon ever detonated in human history: 50 megatons
- exploded in Novaya Zemlya zone in Arctic



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Mutually Assured Destruction (MAD)

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USSR collapses in December 1991

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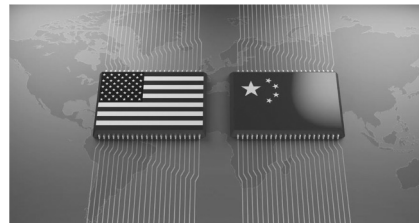
Cold War Ends in 1991



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Cold War Science

- not just science that 'happened' during the Cold War
 - but a kind of science specific to superpower rivalry
 - blurred distinctions between civilian and military research
 - very large-scale funding, large organizations
- Examples
 - atomic energy
 - rocketry / space exploration
 - new weapons of mass destruction
 - lasers, bioweapons
 - computing / software / hardware
 - computer networking / cybernetics
 - applied physics, mathematics
 - psychology
 - genetics / bioengineering
 - earth sciences / geophysics
 - materials science
 - development economics
 - capitalism vs. socialism



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- Overall themes
 - National Defense Education Act
 - funding for education
 - universities and defense spending
 - massive federal funding for science
 - initial research by government
 - profits by private sector
 - civilian-military relationship
 - military research -> civilian use
 - 'dual use'
 - civilian science crowded out
 - science-society relationship
 - linear model
 - competition between superpower
 - new methods of management
 - systems engineering, operations research
 - protest / dissent
 - Vietnam war

