

A History of Knowledge

Oldest Knowledge

What the Sumerians knew

What the Babylonians knew

What the Hittites knew

What the Persians knew

What the Egyptians knew

What the Indians knew

What the Chinese knew

What the Greeks knew

What the Phoenicians knew

What the Romans knew

What the Barbarians knew

What the Jews knew

What the Christians knew

Tang & Sung China

What the Japanese knew

What the Muslims knew

The Middle Ages

Ming & Manchu China

The Renaissance

The Industrial Age

The Victorian Age

The Modern World

What the Modern Age knew

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1919-1945: The Age of the World Wars

1946-1968: The Space Age

1969-1999: The Digital Age

1992-: x Age

"The past is not dead - it isn't even past"

(Christa Wolf, 1976)

*"Time is the substance of which
we are made"*

(Borges)

*Vuoto delle parole
che scavano nel vuoto vuoti
monumenti di vuoto.*

(Giorgio Caproni, 1975)

What the Modern Age knew

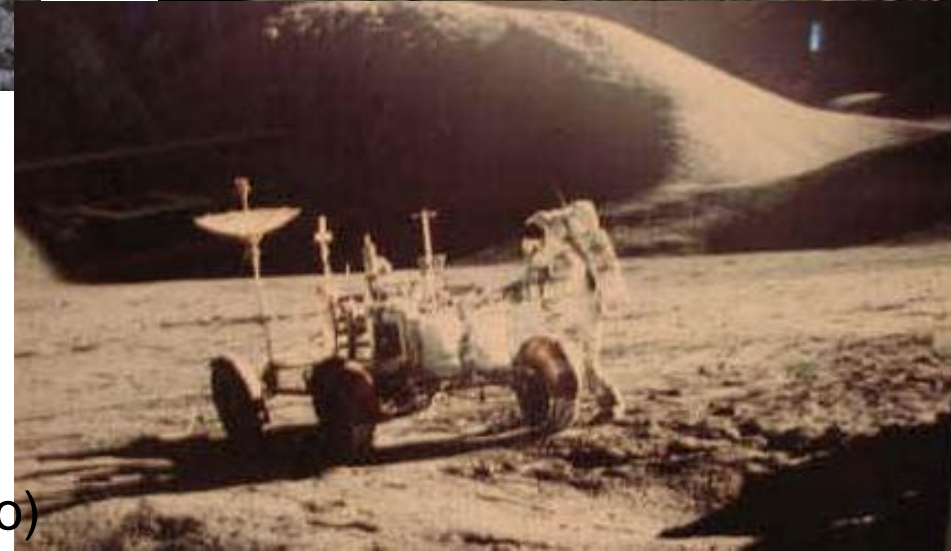
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What the Modern Age knew

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The Modern Age

Neil Armstrong on the Moon (July 1969)



Moon, 1971
(Museum of Science, Chicago)

The Modern Age

1969: Man walks on the moon

1969: Ordine Nuovo terrorizes Italy

1970: Palestinian terrorism

1972: USA president Richard Nixon visits China

1973: Arab countries impose an oil embargo against the West

1974: India detonates an underground nuclear weapon

1974: The world's population is 4 billion

1975: The Khmer Rouge seize power in Cambodia and kill 1.7 million people

1975: the Baader-Meinhof terrorizes Germany

1975-90: civil war in Lebanon (40,000 people will die)

1978: Deng Xiaoping seizes power in China

1978: the Red Brigades terrorize Italy

1979: the Green Party is founded in Germany

The Earth from the Moon



The Modern Age

1979: Islamic clerics (ayatollahs) seize the power in Iran

1980-88: Iraq attacks Iran

1980: USA uses Pakistan to help rebels fighting the Soviet Union in Afghanistan

1981: first cases of AIDS are discovered 1983-2002: One million people die in the Sudanese civil war

1986: the US has 14,000 nuclear warheads and the Soviet Union has 11,000

1987: The world's population is 5 billion

1989: Chinese students join in a pro-democracy protest in the Tiananmen Sq

1989: The Berlin Wall is destroyed

1989: the Japanese economy enters a recession

1991: The Soviet Union is dismantled

The Modern Age

- Cold War
 - India-USSR Cooperation Treaty (august 1971)
 - USA president Nixon visits China (feb 1972)
 - Anti-ballistic Missile Treaty (may 1972)
 - Egypt expels Soviet advisors (july 1972)
 - Augusto Pinochet's coup in Chile (sep 1973)
 - Red Brigades and “Anni di Piombo” in Italy (june 1974)
 - Cuba troops to Angola (sep 1975)
 - Baader-Meinhof and “German Autums” (july 1977)

The Modern Age

- Cold War
 - Average defense budget during the cold war: USA 5.5% of GNP vs USSR's 15%
 - Between 1980-85 US defense budget rose 51%

The Modern Age

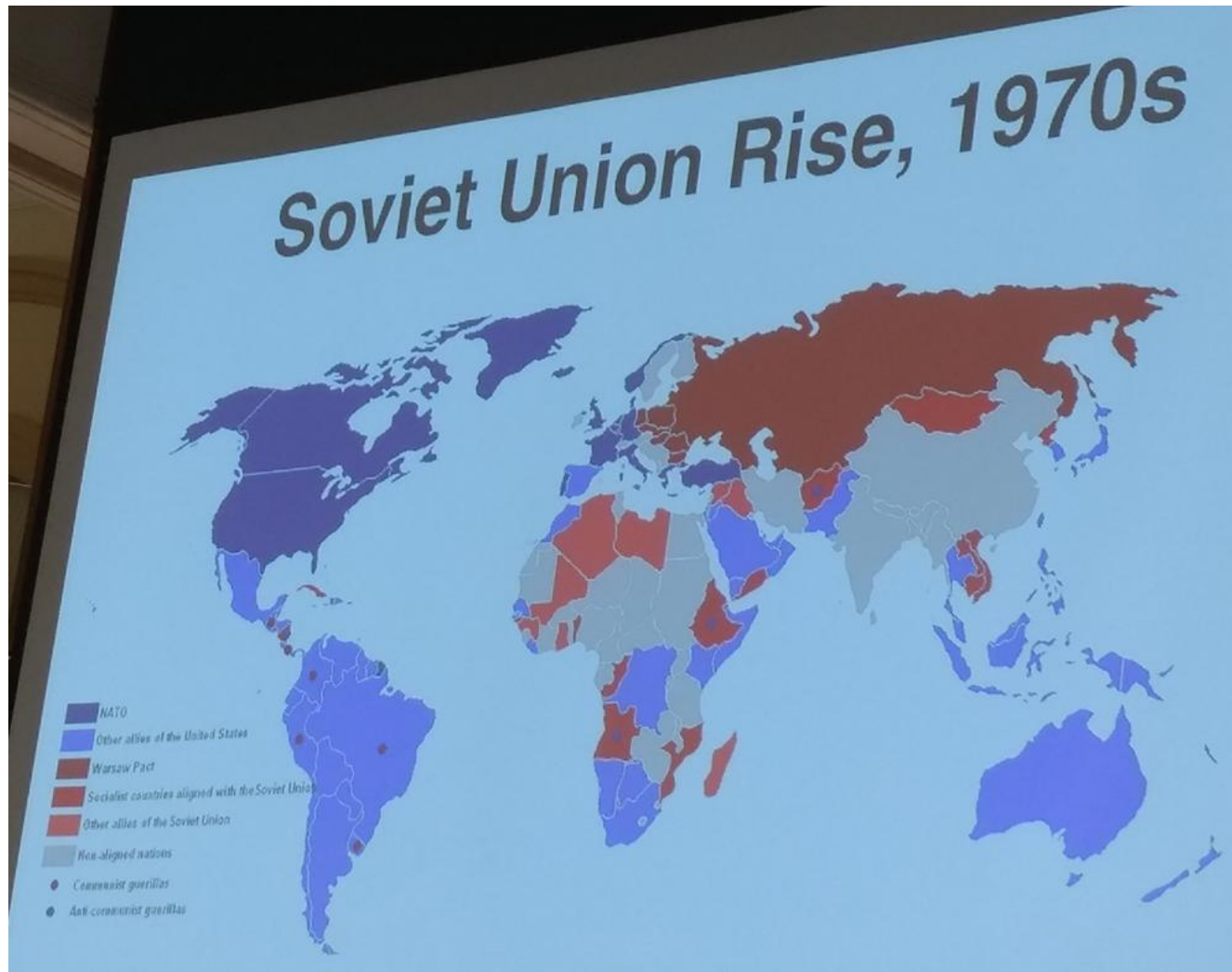
- Oil (OPEC) Crisis
 - Arab countries politicize the price of oil (1973)
 - Most destructive global event since World War II
 - Unemployment in USA and Western Europe rises to tens of millions
 - Millions of people in the Developing World driven to starvation

The Modern Age

- Oil (OPEC) Crisis
 - Arab countries flush with cash (half of the world's liquidity in 1974)
 - No banking system in the Arab world because of Islam
 - Arab money flows back into the commercial banks, that lend money mostly to the governments of Developing Countries, that waste it
 - Islamic Revival

The Modern Age

- Soviet Union



The Modern Age

- Soviet Union
 - Leonid Brezhnev (1964-82)
 - Economic stagnation
 - Exporting natural resources (oil after 1973) in return for Western technology and consumer goods
 - Massive military buildup
 - Crackdown on dissident intellectuals
 - Crackdown on satellite countries

The Modern Age

- Soviet Union
 - Leonid Brezhnev (1964-82)
 - No revolutionary utopia a` la Lenin, but a static bureaucracy of lifelong bureaucrats
 - Low labor productivity, widespread corruption, general apathy
 - Free education: zero illiteracy, several Nobel Prize winners
 - Free medical care, but poor health
 - Cheap housing but poor housing
 - Life expectancy declines because of alcoholism, malnutrition and ecological disasters

The Modern Age

- Soviet Union
 - Leonid Brezhnev (1964-82)
 - Cold War not in Europe (stable borders after the Helsinki conference of 1975) but in the 3rd world (North Korea, Cuba, Indochina, Nicaragua, Angola, Mozambique, Ethiopia, Afghanistan, Middle East, civil wars in Africa and Asia)
 - Pope “John Paul II” Karol Wojtila (1978)
 - Soviet invasion of Afghanistan (1979)
 - Solidarnosc in Poland (1980)
 - Emigration of Jews to Israel after 1967

The Modern Age

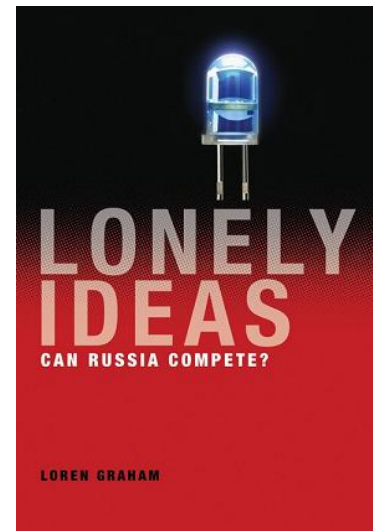
- Soviet Union
 - After Brezhnev (1982-91)
 - Gerontocracy: the country is run by old bureaucrats with no revolutionary spirit
 - 1983: Downing of a South Korea airliner
 - 1986: Chernobyl nuclear disaster
 - 1988: Armenian earthquake
 - Decline of oil prices
 - 1986: the US has 14,000 nuclear warheads and the Soviet Union has 11,000

The Modern Age

- Soviet Union
 - Mikhail Gorbachev (1985-91)
 - Economic crisis due to low oil prices
 - Relaxation of censorship
 - Political transparency reveals to the nation the extent of the crisis
 - Policy of nuclear reduction (resisted by the USA)
 - 50% of Soviet citizens are Russian, 50% are not
 - 1989: first democratic elections since 1917
 - 1991: The Soviet Union disintegrates into 15 states and Russia loses what it had gained in 1945

The Modern Age

- Soviet Union
 - A chronic Russian problem: not widespread innovation but forced innovation (and historical resistance to democratization)
 - What Russia always lacked:
 - a society that values genius
 - an economic system that favors investment in new ideas
 - a legal system that protects intellectual property
 - a political system that encourages the individual profit from innovation



The Modern Age

- The US Empire
 - 6% of the world's population but 30% of the world's GNP and 42% of the Nobel Prizes
 - Only major empire in history that did not focus on territorial annexations

The Modern Age

- The US Empire
 - The fall of communism
 - The spread of democracy and capitalism
 - Free trade zones
 - The global village
 - Druglords
 - AIDS
 - Marketing (as a threat to democracy)
 - Islamic fundamentalism
 - Silicon Valley
 - The African wars
 - Nuclear proliferation
 - The age of wealth
 - Nation building

The Modern Age

- The US Empire
 - The new regional powers
 - European Union
 - Russia
 - Turkey
 - Israel
 - Iran
 - China
 - India
 - Japan
 - Australia
 - Nigeria, South Africa
 - Brazil, Argentina
 - The Gulf War
 - Central Asia
 - Hyper-terrorism

The Modern Age

- The US Empire
 - Not an empire (Athens, Venice)
 - Revolutionary (not imperial) mission to spread liberal democracy around the world
 - Liberation (not expansion) wars
 - Enemies: Anti-liberalism, enemies of liberal democracy (Nazism, Fascism, Communism, Islam)
 - Civilization of cosmopolitan immigrants

The Modern Age

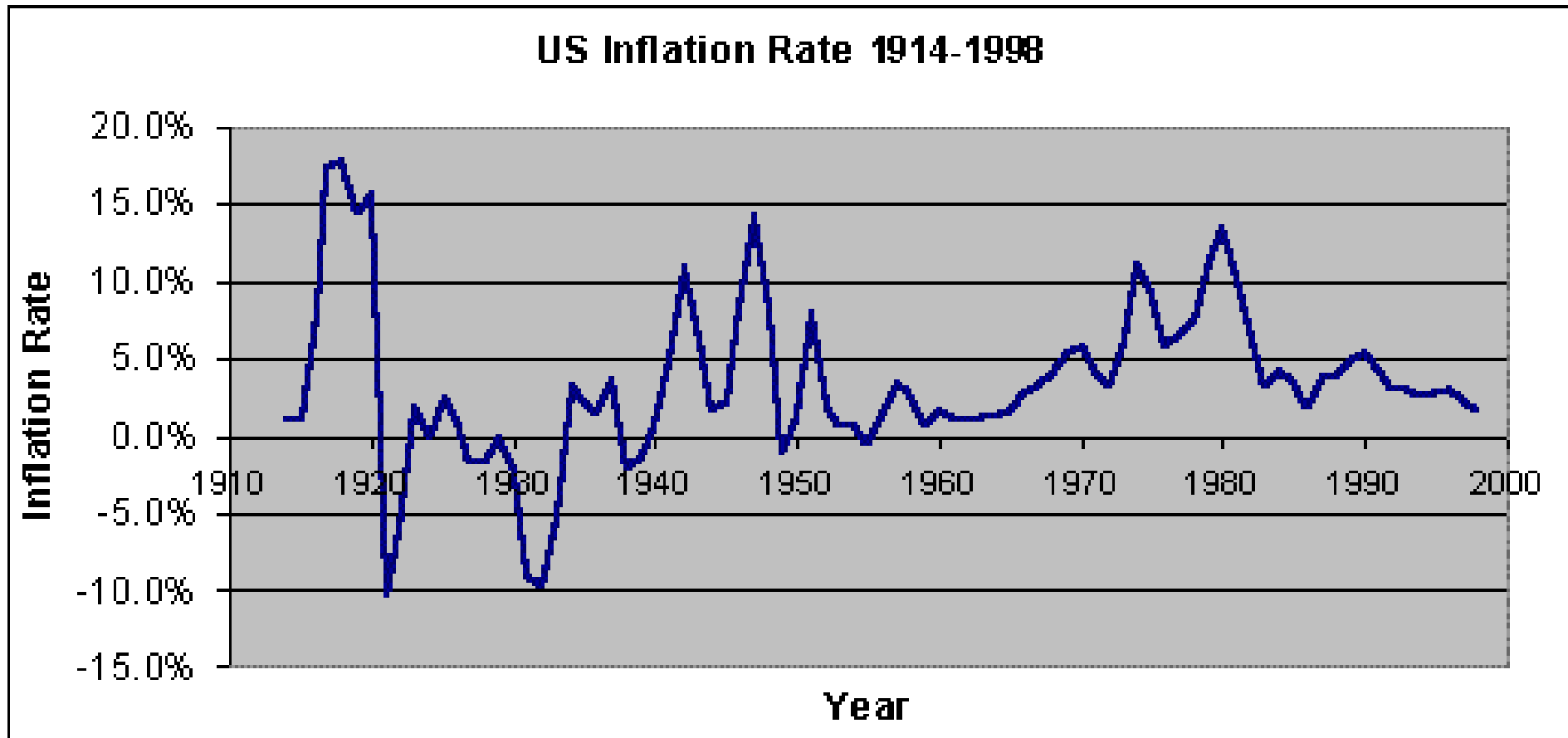
- USA defeated in
 - Vietnam (1975)
 - Iran (1979)
 - Lebanon (1983)
 - Somalia (1992)

What the Modern Age knew

- USA: crisis and restructuring
 - 1970s: USA net importer (no longer exporter) of oil
 - 1973: OPEC's oil embargo
 - 1980: USA inflation is 13.5%
 - 1980s: Ronald Reagan's deregulation

What the Modern Age knew

- **USA: inflation**



What the Modern Age knew

- USA's political transformation
 - The USA's Constitution
 - Liberty, not democracy
 - Delegation of democracy
 - Distrust of the founding fathers for the masses

What the Modern Age knew

- USA's political transformation
 - After the Democratic Convention of 1968
 - Party primaries
 - Boom of referendums ("Proposition 13" in California, 1978)
 - Boom of polls (emergence of the public opinion)
 - A politician's reelection depend on public opinion, not on the party elders
 - Campaign money needed to influence public opinion
 - Special-interest groups influence public opinion

What the Modern Age knew

- USA's political transformation
 - The USA system after 1968
 - Regulation of capitalism
 - Deregulation of democracy
 - Politics dominated by lobbies

What the Modern Age knew

- USA/ Middle-class
 - 1970s:
 - High inflation
 - Homes and education become unaffordable, rising faster than income
 - 1980s:
 - Wealth gap - two-tier society (upper and lower middle-class)
 - Yuppie
 - Two breadwinners per family

What the Modern Age knew

- USA/ Neoliberalism
 - New Deal: regulated capitalism to end the era of “robber-baron capitalism” that caused the 1929 crisis (John Maynard Keynes’ economics in the USA, David Lloyd George’s social reforms in Britain)
 - New Deal model falters in the 1970s (inflation and stagnation)
 - Neoliberalism: restrict the capacity of national governments to manage capitalism - markets work efficiently, governments corrupt (economic theories of Friedrich Hayek and Henry Simons)
 - Government rules must protect the markets from the government
 - Government intervention is necessary but only to protect free markets from government

What the Modern Age knew

- USA/ Neoliberalism
 - Neoliberalism is about building institutions to protect markets from the threat of democracy
 - Deregulation, privatization, free trade, globalization (and offshoring of labor)
 - The deregulation of financial markets leads to innovations, but also to reckless speculation
 - Roosevelt to Carter: capitalism is mostly national
 - After Reagan capitalism becomes increasingly multinational

What the Modern Age knew

- USA/ Neoliberalism
 - Uruguay Round of trade talks (1986–1994) shift the balance of power between the state and the market
 - Weakening of the nation-state in favor of the global markets
 - 1995: The new regime is codified in the World Trade Organization (basically Hayek’s “free-trade world federation”)

What the Modern Age knew

- USA/ Immigration
 - 1965: The restrictions of 1921 are lifted

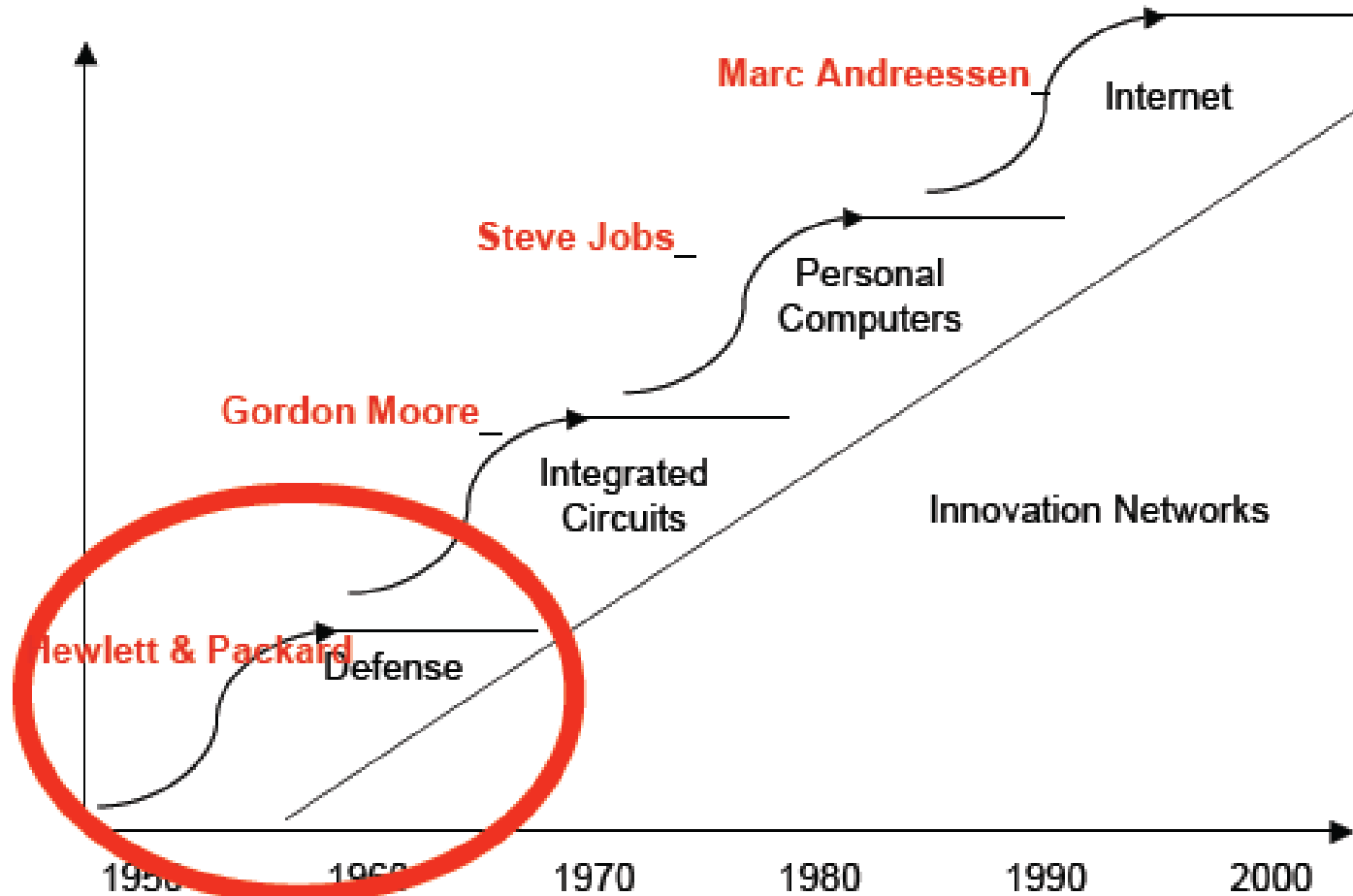
Modern Era (1965-present) 2010		44,495,000	100
	Mexico	12,416,000	28
	China*	2,479,000	6
	India	2,077,000	5
	Philippines	1,990,000	4
	Korea	1,391,000	3
	Vietnam	1,291,000	3
	Former USSR	1,272,000	3
	El Salvador	1,101,000	2
	Cuba	1,090,000	2
	Dominican Republic	912,000	2
Region totals	Latin America	22,111,000	50
	South/East Asia	11,811,000	27
	Europe, total	5,373,000	12
	Canada**	880,000	2
	Africa/Middle East	3,211,000	7
	All other	1,110,000	2

What the Modern Age knew

- Economic revolutions
 - Industrial revolution in Britain (textile)
 - Industrial revolution in the USA (agricultural)
 - Transportation revolution (steamships and trains)
 - Steel and electricity
 - Oil, cars, assembly lines
 - Computers, Internet, Mobile Phone

What the Modern Age knew

- **Silicon Valley**



What the Modern Age knew

- **Silicon Valley**
 - **Fred Terman (Stanford University)**
 - Graduate students encouraged to start companies
 - Professors encouraged to consult for companies
 - Terman and other professors take board seats
 - Technology transfer/IP licensing easy
 - Getting out in the real world is *good* for your academic career

What the Modern Age knew

- **Silicon Valley**
 - **1939: Hewlett-Packard (1939)**
 - **1946: Stanford Research Institute: think tank for military high-tech**
 - **1951: Stanford Industrial Park**
 - **1956: Shockley Transistor Corporation**
 - **1957: Fairchild Semiconductor**
 - **1968: Doug Engelbart's "mother of all demos"**

What the Modern Age knew

- Silicon Valley
 - 1970: Bob Taylor at Xerox PARC
 - 1971: Intel's 4004, the first commercial microprocessor
 - 1974: IBM's relational database
 - 1975: Xerox PARC's Graphical User Interface
 - 1977: The Apple II and Atari's videogame console
 - 1977: Berkeley's BSD version of Unix
 - 1977: California has more high-tech jobs than New York and Boston combined
 - 1977: Oracle
 - 1982: SUN
 - 1998: Google
 - 2004: Facebook
 - 2007: Apple iPhone

What the Modern Age knew

- Outside Silicon Valley
 - 1943: Tommy Flowers in England builds the first programmable digital electronic computer
 - 1947: The transistor is invented at AT&T Bell Labs (John Bardeen, William Shockley, Walter Brattain)
 - 1958: Jack Kilby at Texas Instruments invents the integrated circuit
 - 1958: NASA and DARPA are set up by the government
 - 1960: DEC of Boston introduces the first minicomputer, the PDP-1
 - 1969: Bell Labs unveils the Unix operating system
 - 1969: The Arpanet at DARPA
 - 1969: Ted Codd of IBM invents the relational database

What the Modern Age knew

- Outside Silicon Valley
 - 1969: Comuserve's dial-up service
 - 1974: The first personal computer, the Altair 8800 (New Mexico)
 - 1975: Microsoft in Seattle (software for personal computers)
 - 1977: Dennis Hayes of National Data Corporation invents the PC modem,
 - 1981: The IBM PC running Microsoft MS-DOS
 - 1983: The laptop
 - 1984: Psion's personal digital assistant
 - 1987: Robert Gaskins and Dennis Austin's PowerPoint, a new way to communicate
 - 1990: Tim Berners-Lee at CERN invents the World-Wide Web

What the Modern Age knew

- Outside Silicon Valley
 - 1990: Archie in Canada, the first search engine
 - 1993: Marc Andreessen's Mosaic at Univ of Illinois, the first browser for the World Wide Web
 - 1995: Netscape's IPO (dotcom boom)
 - 1996: Nokia introduces the first "smartphone" in Finland
 - 1997: SixDegrees.com in New York, the first social networking website

What the Modern Age knew

- **The Bay Area**
 - **1964: Mario Savio's Free Speech Movement in Berkeley**
 - **1966: First "Summer of Love" in San Francisco (hippies)**

What the Modern Age knew

- **Silicon Valley**
 - See <http://www.scaruffi.com/politics/silicon.html>

The Modern Age

- **Democratic regimes**
 - **See** www.scaruffi.com/politics/democrat.html

The Modern Age

- **Democratic regimes**
 - **Waves of democratization**
 - **1945: major Western European countries**
 - **Mid 1970s: Southern Europe**
 - **1980s: Latin America**
 - **Late 1980s/ early 1990s: East Asia**
 - **1990s: former communist countries**
 - **1990s: Africa**

The Modern Age

- **The Soviet Union**
 - **Oil revenues fund**
 - **Inefficient economy**
 - **War in Afghanistan**
 - **Worldwide guerrilla movements**

The Modern Age

- Terrorism
 - Israel: Al Fatah and splinter groups (1967)
 - Britain: IRA (1969)
 - Italy: Ordine Nuovo (1969)
 - Japan: Red Army (1972)
 - Italy: Brigade Rosse (1972)
 - Germany: Baader-Meinhof (1975)
 - Sri Lanka: Tamil (1978)
 - Spain: ETA (1980)
 - Lebanon: Hezbollah (1982)
 - India: Sikh (1984)
 - France: Algerian (1986)

The Modern Age

- Middle East
 - See logos10 (From “the oil era” to “the 1990s”)

The Modern Age

- Latin America
 - 1975: There are fewer democracies in Latin America than there were in 1955
 - 1980: Only two South American countries have had a democratic regime for at least a decade: Venezuela and Colombia
 - Mexico:
 - 1971: Student riots kill dozens (the "Corpus Christi massacre")
 - 1974: Economic crisis, after 20 years of rapid growth (average +6.5%)
 - 1976: Inflation is 27%
 - 1979: The Guadalajara Cartel is formed
 - 1988: Jose Amezcu Contreras founds the Colima Cartel

The Modern Age

- Latin America
 - Guatemala
 - 1960-96: Civil war waged by leftist rebels
 - 1971: About one thousand people are murdered in Guatemala by right and left terrorists
 - 1978: Indios are massacred by the army at Panzos
 - 1982: Coup by general Rios Montt
 - 1983: Rios Montt is deposed and Guatemala returns to civilian rule
 - Haiti
 - 1986: JeanClaude Duvalier is deposed in a military coup
 - 1991: Another military coup deposes the first democratically elected president, Jean-Bertrand Aristide

The Modern Age

- Latin America
 - Nicaragua
 - 1978: Opposition leader Pedro Joaquin Chamorro killed
 - 1979: Daniel Ortega's Sandinistas overthrow Somoza
 - 1981: Ronald Reagan funds "Contras" based in Honduras to fight the Sandinistas
 - 1990: The Sandinistas allow free elections in return for the end of contras insurgency, and Violeta Chamorro wins
 - Panama
 - 1968-81: Omar Torrijos Herrera dictatorship
 - 1983: Manuel Noriega becomes dictator
 - 1989: The USA invades Panama and deposes Manuel Noriega, and returns Panama to civilian rule

The Modern Age

- Latin America
 - Colombia:
 - Leftist insurgency, terrorism attacks, strikes, drug trafficking
 - Political chaos
 - A string of ineffective presidents
 - 1985: The M-19 guerrilla group kills 11 of the 25 Supreme Court Justices of Colombia
 - 1987: Drug cartels terrorize Colombia
 - 1990: the presidents of Bolivia, Colombia, Peru and the USA join in the "war on drugs" (Cartagena "Drug Summit")
 - 1991: Colombia's yearly murder rate peaks at almost 30,000

The Modern Age

- Latin America
 - Venezuela
 - 1971: Venezuela is the fifth producer of oil in the world
 - A prosperous democracy
 - Ecuador
 - 1934-72: Jose Maria Velasco-Ibarra elected president five times
 - 1972: Coup by general Guillermo Rodriguez Lara
 - 1979: Return to civilian rule

The Modern Age

- Latin America
 - Bolivia
 - 1971: Hugo Banzer 's coup
 - 1974: Export boom due to oil and gas
 - 1982: Return to civilian government
 - 1990: Cartagena "Drug Summit" the presidents of Bolivia, Colombia, Peru and the USA join in the "war on drugs"

The Modern Age

- Latin America
 - Brazil
 - 1964-74 Brazil's GDP grows 56%
 - 1977: Brazil is the second largest exporter of agricultural products in the world after the USA
 - 1978: Brazil's GDP has quintupled since 1960 and the number of college students has increased to almost 1.5 million
 - 1980: Brazil's economy grows at an average 7% annually over four years
 - 1985: Brazil returns to democracy after 21 years, run by the center-right Partido Movimento Democratico Brasileiro (PMDB)
 - 1987: Brazil's inflation reaches 338%
 - 1990: Brazil's inflation is 5,000%

The Modern Age

- Latin America
 - Uruguay
 - 1970: Peak of the Tupamaros insurgency in Uruguay, with kidnappings and assassinations
 - 1973: Military coup, ending 70 years of democratic governments
 - 1985: Julio Marma Sanguinetti is the first civilian president after the military dictatorship, and dominates until 2000
 - Paraguay
 - 1954-89: Alfredo Stroessner dictatorship
 - 1989: Stroessner deposed in a coup

The Modern Age

- Latin America
 - Peru
 - 1971: Sendero Luminoso
 - 1974: Hyper-inflation
 - 1979: Peru enacts a new constitution, largely drawn by Velasco, and returns to democratic rule
 - 1984: "Movimiento Revolucionario Tupac Amaru" is formed
 - 1985: Alan Garcia elected president
 - Massive economic crisis, corruption scandals and increased political violence
 - 1990: the presidents of Bolivia, Colombia, Peru and the USA join in the "war on drugs" (Cartagena "Drug Summit")
 - 1990: Alberto Fujimori elected president
 - 3,384 Peruvians die in political violence just in 1990

The Modern Age

- Latin America
 - Argentina
 - 1973: Juan Peron returns from exile and wins Argentina's presidential elections for the second time
 - 1974: Isabel Peron, the second wife of Juan Peron, becomes president of Argentina at his death, the first woman to become president in the Americas
 - 1976: After inflation hits 750%, Isabel Peron is deposed by general Jorge Videla in a military coup
 - 1977: Mothers of students who disappeared under Videla's rule stage demonstrations
 - 1983: Following defeat in the Falklands war, the military junta collapses and Argentina returns to civilian rule
 - 1990: Inflation hits 8,000% and the economy has shrunk 10% in a decade

The Modern Age

- Latin America
 - Chile
 - 1970: The left-wing Unidad Popular led by Salvador Allende wins elections, and Allende becomes the first Marxist politician in the world to be elected democratically
 - Program of nationalization of foreign companies (copper, coal, steel) and distribution of land to the poor against an opposition that enjoys a majority in parliament
 - Hyper-inflation, economic crisis and strikes
 - 1973: Allende overthrown by general Augusto Pinochet
 - 1976: Chile undergoes an "economic miracle" with average GDP growth of 7%
 - 1988: Pinochet resigns, ending the military dictatorship that killed 3,197 civilians in 16 years

The Modern Age

- Media
 - Intellectuals invented the media, which created public opinion
 - The media took on a life of their own and don't report to intellectuals anymore
 - Public opinion is decoupled from the intellectuals

The Modern Age

- The pay phone



The Modern Age

- Public Opinion
 - Democracy divides the nation into Right and Left
 - The ideological split dates from 1945 in Europe (communist parties vs capitalistic parties)
 - The ideological split in the USA dates from the Vietnam war

The Modern Age

- Dissent in the West
 - Peace marches
 - 1964 student riots (1968 in France, Italy, Germany)
 - Consumer advocates (Ralph Nader)
 - Environmentalists (Green Party)
 - Noam Chomsky
 - Michael Moore

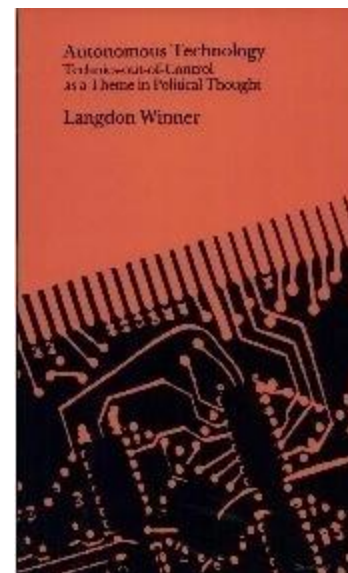
The Modern Age

- Technocratic society
 - Specialistic lingos
 - Ghettization of the humanities

The Modern Age

- Technology Doomsdayers

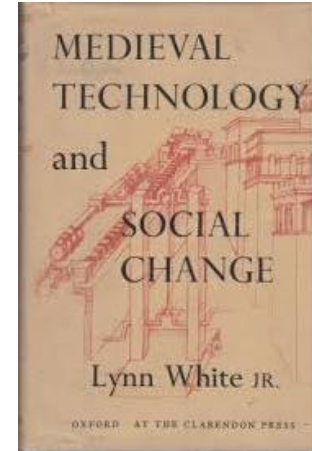
- Langdon Winner: "Autonomous Technology" (1977)
- Emergence of an elite class of scientists, technicians, and engineers, who displace the traditional political class as rulers of society
- Not "who rules?" but "**what** rules?"
- *"Technology in today's world has run way ahead of our ability to exploit its riches to enhance our daily lives"*
- *"We need to think much harder about how we can cultivate and reward the kind of innovative engineering that can harness the vast potential of the tech riches around us to lift our society and ultimately the world to the next stage of human social development."*



The Modern Age

- Critique of Technology
Doomsdayers

- Lynn White: *“A new device merely opens a door; it does not compel one to enter”*
(Medieval Technology and Social Change“
(1968)
- The human element:
 - An admirer approached the great violinist Fritz Kreisler after a concert and told him: “Maestro, your violin makes such beautiful music”. Kreisler held his violin up to his ear and replied: “I don’t hear any music coming out of it”



The Modern Age

- Critique of Technology Doomsdayers
 - Melvin Kranzberg’s Six Laws of Technology (presidential address at the meeting of the Society for the History of Technology, 1985)
 - 1. *“Technology is neither good nor bad; nor is it neutral.”*
 - 4. *“Many complicated sociocultural factors... are involved, even in what might seem to be ‘purely technical’ decisions”*
 - 6. *“Behind every machine, I see a face—indeed, many faces: the engineer, the worker, the businessman or businesswoman, and, sometimes, the general and admiral. Furthermore, the function of the technology is its use by human beings”*

“Technology is
neither good
nor bad; nor is
it neutral.”

– Melvin Kranzberg



The Modern Age

- Exporting the American dream
 - 1945: Tata Motors is established in Mumbai to build locomotives for India
 - 1946: Akio Morita and Masaru Ibuka found Tokyo Tsushin Kogyo (later Sony) in Japan
 - 1947: Hyundai in South Korea
 - 1947: Koo In-Hwoi founds the plastic manufacturing company Lak-Hui (later LG) in South Korea
 - 1948: HC Ting leaves China and founds the plastic factory Kader Industrial Company in Hong Kong
 - 1948: Soichiro Honda founds a motorcycle manufacturing company in Japan
 - 1949: Japan's MITI as an architect of industrial policy
 - 1949: The trading firm Li & Fung moves its headquarters from mainland China to Hong Kong under manager Fung Hon-chu
 - 1950: Li Ka-shing founds the plastic factory Cheung Kong in the British colony of Hong Kong

The Modern Age

- Exporting the American dream
 - 1952: Mohan Mittal founds a steel business (later Ispat) in Kolkata, India
 - 1953: Korea is partitioned between South and North
 - 1953: Taiichi Ohno invents "lean manufacturing" at Japan's Toyota
 - 1954: Sony's transistor radio
 - 1954: Japan's Fujitsu enters the computer market
 - 1956: Nand Kishore Ruia founds the iron-ore export company Essar in Chennai, India
 - 1957: Mao's "Great Leap Forward" in China
 - 1957: Indonesian students are invited by the Ford Foundation to study Economics at UC Berkeley in California (the "Berkeley mafia")

The Modern Age

- Exporting the American dream
 - 1958: The USA forces Taiwan's regime to abandon plans to recover the mainland and focus on economic development
 - 1959: Famine in China kills 38 million people in 4 years
 - 1959: Lee Kuan Yew wins elections in the British colony of Singapore
 - 1959: Japan's Honda is the world's largest motorcycle manufacturer
 - 1959: Japan's Hitachi builds its first transistor computer

The Modern Age

- Exporting the American dream
 - 1960: Half of South Korea's GDP is due to USA aid
 - 1960: Hayato Ikeda's plan to double Japan's national income by 1970
 - 1961: The general Park Chung-hee seizes power in South Korea
 - 1961: Sony becomes the first Japanese company to be listed on the New York Stock Exchange
 - 1961: Shigeru Sahashi becomes director of the Enterprises Bureau at Japan's MITI
 - 1961: The Economic Development Board in Singapore
 - 1963: Japan's Honda introduces its first car

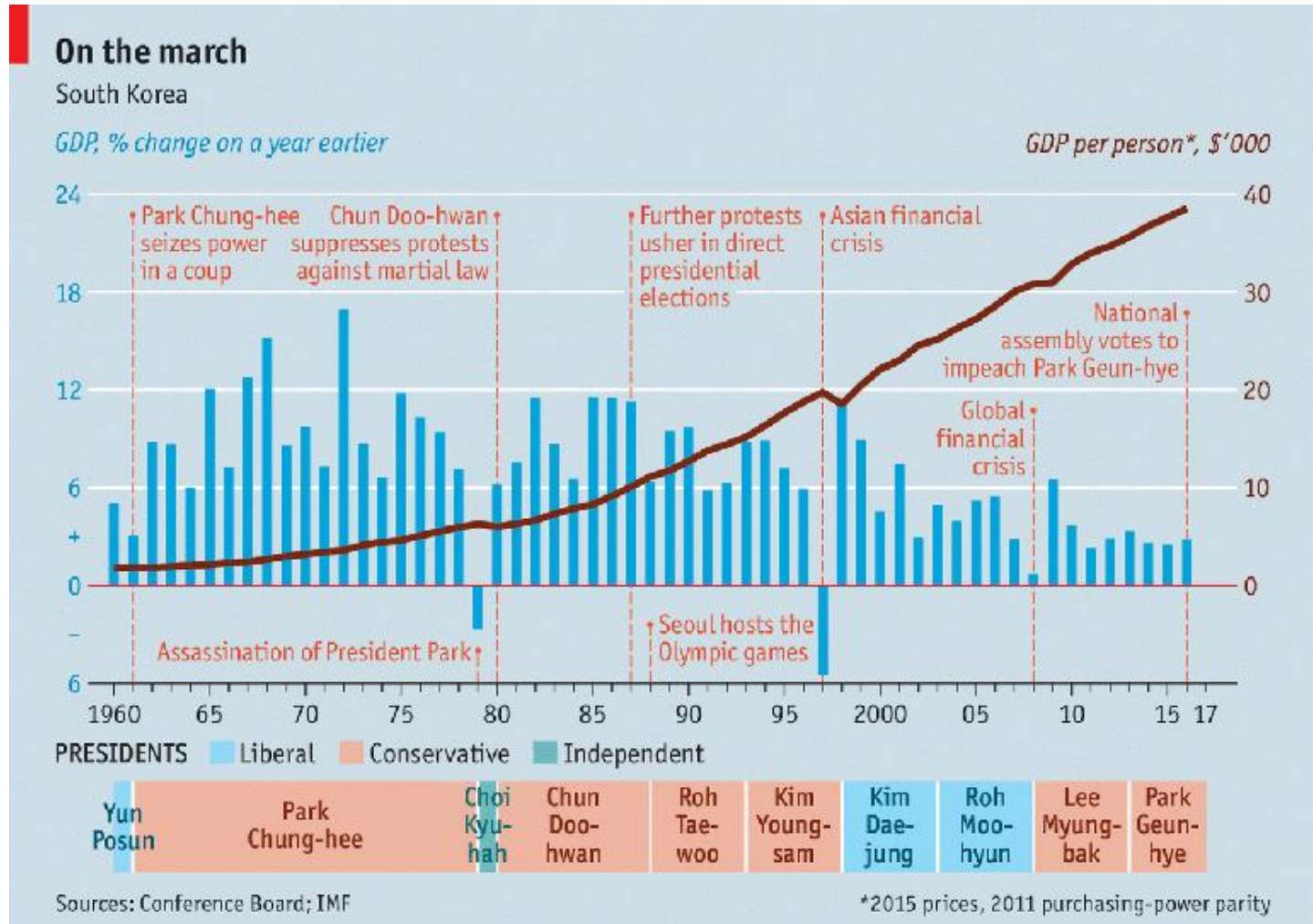
The Modern Age

- Exporting the American dream
 - 1964: South Korea launches plan to improve exports
 - 1964: The Shinkansen (bullet train) is inaugurated in Japan



The Modern Age

- South Korean growth



The Modern Age

- Exporting the American dream
 - 1965: Singapore independent under Lee
 - 1965: Chinese physicist Li Kuo-ting becomes Minister of Economy in Taiwan ("the father of Taiwan's economic miracle")
 - 1966: Taiwan's Ministry of Economy establishes an "Export Processing Zone" (EPZ) in Kaohsiung, whose tenant companies enjoy privileges but must export all their output
 - 1966: Mao's "cultural revolution" in China
 - 1966: The general Suharto seizes power in Indonesia and announces a program of economic reforms designed by the "Berkeley mafia"
 - 1966: LG produces South Korea's first television set

The Modern Age

- Exporting the American dream
 - 1967: Widjojo Nitisastro, the senior member of the "Berkeley mafia", is appointed Minister of Planning in Indonesia
 - 1967: Kim Woo-chong founds Daewoo in South Korea to export clothing
 - 1968: Singapore's plan to woo foreign multinationals
 - 1968: Japan's Toyota introduces the Corolla in the USA
 - 1969: Samsung-Sanyo Electronics established in South Korea
 - 1969: Texas Instruments, National and Fairchild open plants in Singapore
 - 1969: Shih Ming and Andrew Chiu found Taiwan's first semiconductor company, Unitron
 - 1969: Japan's Seiko introduces the world's first commercial quartz wristwatch
 - 1969: India's Tata appoints Faqir Chand Kohli in charge of computer services

The Modern Age

- Exporting the American dream
 - 1970: Japan's Sharp and Canon introduce the first pocket calculators
 - 1970: Om Prakash Jindal opens a steel plant at Hisar, India
 - 1971: Unitron's engineer Stan Shih designs Taiwan`s first desktop calculator
 - 1972: Indian-born MIT-graduate Narendra Patni founds Data Conversion (later Patni) in the USA with back-office operations in Pune
 - 1973: South Korea's first steel plant
 - 1973: Japan's Canon introduces the first color photocopier
 - 1973: Taiwan establishes the Industrial Technological Research Institute (ITRI) to develop technologies that can be turned into goods for foreign markets

The Modern Age

- Exporting the American dream
 - 1974: Japan's Hitachi produces its first IBM-compatible mainframe computer
 - 1974: Hyundai's first ship
 - 1974: Tata obtains a software contract from BUrroughs, the first major software project offsources by the USA to India
 - 1974: Tai-Ming "Terry" Gou founds the plastic factory Foxconn in Taiwan
 - 1975: Azim Premji's Bangalore-based Wipro starts selling the first computer made in India
 - 1976: Hyundai's first car
 - 1976: Stan Shih and his wife Carolyn Yeh found the calculator maker Multitech (later Acer) in Taiwan
 - 1976: Taiwan's EPZs employ 75,000 people, four fifths of whom are female

The Modern Age

- Exporting the American dream
 - 1977: 57 foreign firms, including IBM, close down their Indian plants rather than meet Indian demands for some degree of Indian ownership
 - 1978: Karnataka State's agency Keonics establishes Electronics City in Bangalore, India
 - 1978: Deng launches economic reforms in mainland China
 - 1979: Mainland China sets up a Special Economic Zone (SEZ) in Shenzhen to experiment with foreign investment and export manufacturing
 - 1979: Japan's Sony introduces the portable music player Walkman
 - 1980: Taiwan's minister Li Kuo-ting establishes the Hsinchu Science Park
 - 1980: Li Ka-shing buys Hutchinson and becomes the first Chinese to run a Western corporation in Hong Kong

The Modern Age

- Exporting the American dream
 - 1980: The USA grants mainland China most-favored-nation status, i.e. access to US investors, technology and market
 - 1980: Japan's Sony introduces the double-sided, double-density 3.5" floppy disk
 - 1980: Wipro, to fill a gap after IBM left India, hires Sridhar Mitta who sets up offices in Bangalore to make computers
 - 1980: The largest semiconductor manufacturers in the world are: Texas Instruments, National, Motorola, Philips (Europe), Intel, NEC (Japan), Fairchild, Hitachi (Japan) and Toshiba (Japan)
 - 1980: Japan's Yamaha releases the first digital synthesizer
 - 1980: Malaysia creates the Heavy Industries Corporation of Malaysia Berhad (HICOM) to promote heavy industry

The Modern Age

- Exporting the American dream
 - 1981: East Asia has the highest poverty rate in the world
 - 1981: Taiwan's Multitech (later Acer) introduces its own computer, the Micro-Professor MPF-I
 - 1981: Narayana Murthy, founds Infosys in Bangalore, India
 - 1981: Mukesh Ambani joins his family's business Reliance in India
 - 1981: Mahathir Mohamad is appointed prime minister of Malaysia
 - 1982: Honda is the first Japanese company to manufacture cars in the USA
 - 1982: Japan's Sony introduces the CD

The Modern Age

- Exporting the American dream
 - 1983: Japan's Sony releases the first consumer camcorder
 - 1983: The "Berkeley mafia" deregulates Indonesia's economy to attract international capital
 - 1983, Anil Ambani joins his family's business Reliance in India
 - 1983: Japan's Nintendo launches the videogame console Nintendo Entertainment System
 - 1983: Taiwan's Multitech (Acer) introduces one of the earliest IBM-compatible PCs

The Modern Age

- Exporting the American dream
 - 1984: Fujio Masuoka at Japan's Toshiba invents flash memory
 - 1984: Japanese firms introduce the 256K DRAM chips
 - 1984: Liu Chuanzhi of the Chinese Academy of Sciences founds a privately-run but state-owned company, Legend (later Lenovo), to sell IBM's personal computers in China
 - 1984: Stan Shih of Taiwan's Multitech (Acer) founds the research firm Suntek in Silicon Valley
 - 1984: Mainland China enacts reforms that limit the interference of government officials in the management of companies
 - 1985: Taiwan hires US-based semiconductor-industry executive Morris Chang to run the ITRI
 - 1985: The Plaza Accord devalues the US dollar
 - 1985: Malaysia's Proton manufactures its first car

The Modern Age

- Exporting the American dream
 - 1986: Malaysia liberalizes its economy
 - 1986: Taiwan's Acer, leveraging its supply-chain optimization strategy, releases the world's second computer based on Intel's 386 microprocessor (one month after Compaq)
 - 1986: Sunil Mittal founds the telecom company Bharti Telecom Limited in India
 - 1987: The largest semiconductor manufacturers in the world are Japan's NEC, Japan's Toshiba and Japan's Hitachi
 - 1987: ITRI's president Morris Chang founds Taiwan Semiconductor Manufacturing Company (TSMC), the first independent silicon-chip foundry in the world, to serve the "fabless" companies of the USA

The Modern Age

- Exporting the American dream
 - 1988: Taiwan's Foxconn opens a pioneering factory in China's experimental city Shenzhen
 - 1988: Barry Lam founds Quanta Computer in Taiwan
 - 1988: Japan's Sony acquires CBS Records
 - 1988: Japan's Fujitsu introduces the world's first fully digital consumer camera
 - 1988: Gautam Adani opens a trading house in India
 - 1989: Japan's Sony acquires Columbia Pictures Entertainment
 - 1989: Japan's Mitsubishi purchases the Rockefeller Center in the USA
 - 1989: South Korea is the world's sixth largest manufacturer of consumer electronics

The Modern Age

- Exporting the American dream
 - 1989: Japan owns half of the world's shipbuilding market
 - 1989: The market capitalization of Japanese companies represents 42% of all stocks in the world and the value of land is the highest in the world
 - 1990: Japanese carmakers have a 28% share of the US market
 - 1990: China's Lenovo introduces its first homemade computer when the market is dominated by IBM, HP and Compaq
 - 1990: The Japanese stock market crashes, the beginning of a 13-year stagnation

The Modern Age

- Exporting the American dream
 - First "Asian tigers": Japan, South Korea, Taiwan, Singapore, Hong Kong
 - Different philosophies: Shinto, Buddhist, Confucian
 - Different histories: Japan was already westernized, Taiwan partially (as a Japanese colony), Korea never was, Hong Kong and Singapore are British colonies

The Modern Age

- Exporting the American dream
 - Role of the state: from ubiquitous (Japan) to totalitarian (Singapore, South Korea, Taiwan) to indifferent (Hong Kong)
 - Government: mostly of humble origins and uneducated
 - Benevolent dictator whose main goal is not his own wealth or a dynasty but the good of the country (Not unique to Asia: Hitler, Mussolini, Stalin, Pinochet)

The Modern Age

- Exporting the American dream
 - East Asian countries lack natural resources
 - To pay for imports, they export cheap goods to the USA
 - Develop a knack for understanding Western consumer behavior and social trends
 - The USA de facto pays for their development
 - The geopolitics of the Cold War (need to contain the Soviet Union) de facto drives the early Asian boom
 - What they have in common is not cultural or political background but that they are allies of the USA during the Cold War

The Modern Age

- Exporting the American dream
 - They ignore Western economic theories and use common sense and traditional values
 - They ignore social and economic ideologies of the Third World
 - Centralized economy enables long-term planning and short-term decisions
 - The government rewards with favors the companies that achieve world-class results
 - Asian people demand economic growth before democratic growth

The Modern Age

- **Exporting the American dream**
 - **Singapore's unique model: favors foreign investment by multinationals over nurturing national conglomerates**

The Modern Age

- **Exporting the American dream**
 - **Japanese and Korean miracles**
 - **1979: 435,000 workers employed by USA steel industry**
 - **1989: down to 169,000**

The Modern Age

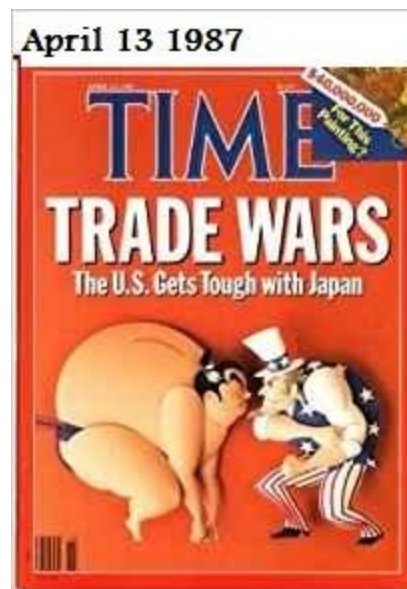
- Exporting the American dream
 - Mass adoption by Asia of western manners (eg, clothes, plastic, sport, vending machines, architecture)
 - USA influence spreads from Japan, South Korea, Taiwan to the rest of Asia much faster than anything from China or India ever did
 - For Japan second revolution after Buddhism (first emperor, shogunate, Buddhism, Meiji, USA)
 - For China (1980s) the real "cultural revolution" (indirectly fostered by Sun Yatsen and Mao because they first abandoned Confucianism and took western models)
 - For India (1990s): evolution from British to USA model

The Modern Age

- Exporting the American dream
 - The USA succeeds where all previous western empires had failed: to fully westernize the Far East
 - Electronic/digital gadgets become the new defining cultural pattern of the Far East (instead of silk and spices)

The Modern Age

- Exporting the American dream
 - The rise of Japan
 - Almost a trade war between the USA and Japan



The Modern Age

- **Wars and massacres:**
 - see <file:///c:/web/politics/massacre.html>

The Modern Age

- Silk: World trade
- Sugar: Multinational capitalism (slave trade)
- Cotton: Industrial revolution
- Oil: Global village (transportation, electrical energy)
- Each economic driver decayed when the following one turned it from luxury good to bulk commodity

The Modern Age

- **Worldwide Industrialization**
 - **British industrialization: driven by the inventions of independent entrepreneurs (small firms)**
 - **USA and German industrialization (late 19th century): driven by systematic innovation (organized R&D and mass production) under the control of corporate managers (large public companies, specializing in the high end of a specific market)**
 - **Japanese and South Korean industrialization (1960s): driven by learning (how to make existing technology more effective) under the control of engineers (family-owned diversified business groups, specializing in the bottom end of many different markets)**

What the Modern World knew

- **Japan's economic miracle**
 - **Between 1950 and 1973 GDP grows at an average 10.5% yearly**
 - **Japan's GDP grows from one third of Britain's in 1952 to twice Britain's in 1980**
 - **Quality Assurance**
 - **Miniaturized high-tech**
 - **Electronic appliances**
 - **Between 1960 and 1984 car production increases from 1% to 23% of world car production**
 - **Semiconductors**

What the Modern World knew

- **Japan's economic miracle**
 - **Universal education**
 - **Low military budget**
 - **Social ethos**
 - **Low turnover (loyalty)**

The Modern Age

- International Trade
 - 1900s: Passenger ships -> movement of people (emigration)
 - 1960s: Fast transportation & long-distance communications -> movement of goods
 - (1990s: Telephone/Internet -> movement of jobs)

The Modern Age

- **Average yearly incomes in 1997**
 - **USA \$29,000**
 - **Mexico \$8,000**
 - **Nigeria \$900**

Dow Jones Index

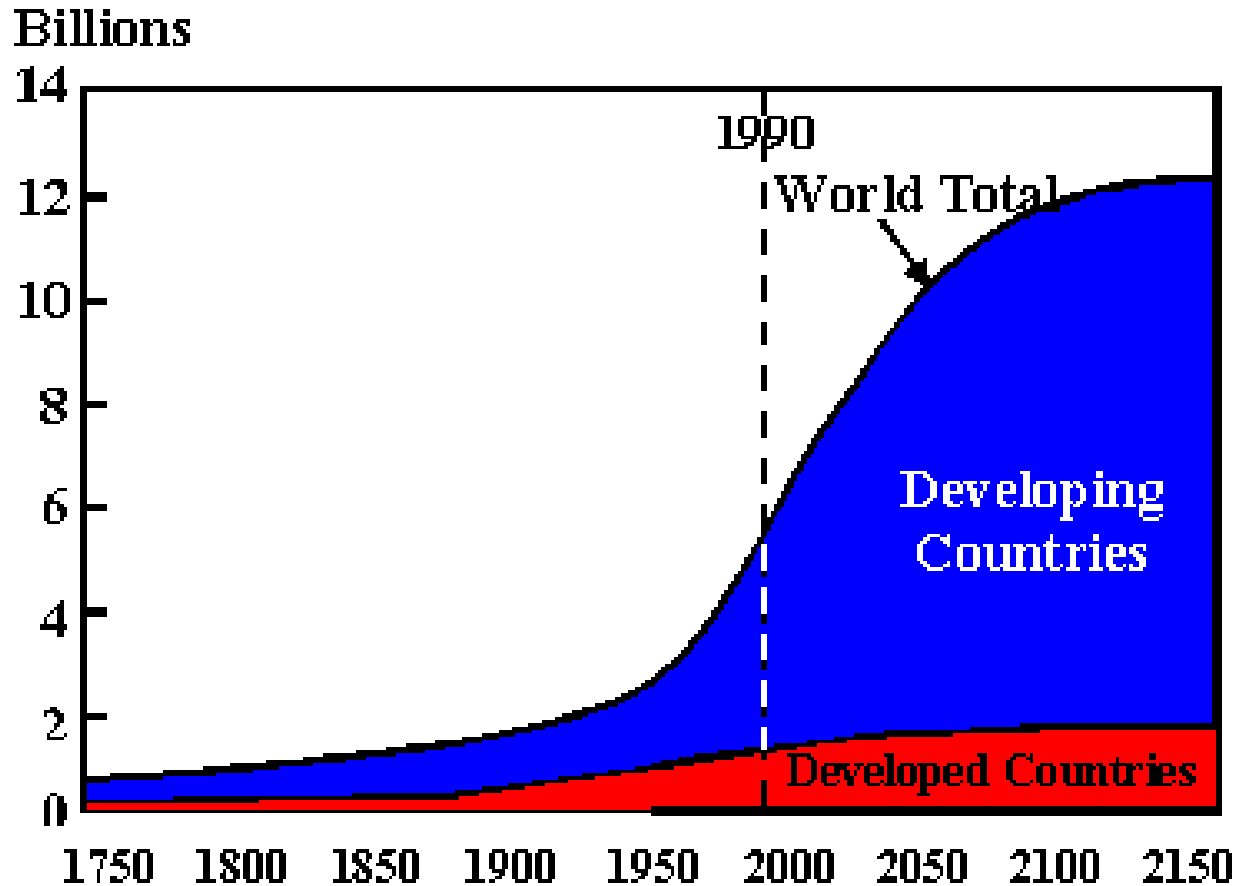


The Modern Age

- **Population explosion**
 - **1950: 2.5 billion**
 - **2000: 6.1 billion in 2000**
 - **2025: 8 billion**
 - **Half of the world's annual population growth of 77 million people occurs in six countries: India, China, Pakistan, Nigeria, Bangladesh, Indonesia.**
 - **”Hyper-urbanization”**: by 2025, the portion of the world's population living in urban areas will increase to nearly 60% of total population
 - **1950: only one city (NYC) exceeds 10m**
 - **2000: 20 cities exceed 10m**
 - **2020: Tokyo 29m; Lagos 24m**

The Modern Age

World population projections, 1750-2150



Source: J. Bongaarts, *The Population Council*, 1994.

The Modern Age

- 1 Tokyo, Japan 28m**
- 2 Mexico City, Mexico 18.1m**
- 3 Mumbai (Bombay), India 18m**
- 4 Sao Paulo, Brazil 17.7m**
- 5 New York, United States 16.6m**
- 6 Shanghai, China 14.2m**
- 7 Lagos, Nigeria 13.5m**
- 8 Los Angeles, United States 13.1m**
- 9 Kolkata (Calcutta), India 12.9m**
- 10 Buenos Aires, Argentina 12.4m**
- 11 Seoul, South Korea 12.2m**
- 12 Beijing, China 12m**
- 13 Karachi, Pakistan 11.8m**
- 14 Delhi, India 11.7m**
- 15 Dhaka, Bangladesh 11m**
- 16 Manila, Philippines 10.8m**
- 17 Cairo, Egypt 10.8m**
- 18 Osaka, Japan 10.6m**
- 19 Rio de Janeiro, Brazil 10.6m**
- 20 Tianjin, China 10.2m**
- 21 Jakarta, Indonesia 9.8m**
- 22 Paris, France 9.6m**
- 23 Istanbul, Turkey 9.410m**
- 24 Moscow, Russia 9.3m**
- 25 London, Britain 7.6m**
- 26 Lima, Peru 7.4m**
- 27 Teheran, Iran 7.380m**
- 28 Bangkok, Thailand 7.2m**

Data: 2000

The Modern Age

- **Population explosion**
 - **Rapid population growth leads to farm fragmentation, land degradation, deforestation, famine.**
 - **Most of the 3 billion people to be added to world population in the next 50 years will be born in areas where land resources are scarce**
 - **1950-1981: grainland expanded from 587 million hectares to 732 million hectares**
 - **1982-2000: grainland fell to 656 million hectares**
 - **Rwanda (Africa's most densely populated country) 1950- 1990: population tripled from 2.1 million to 6.8 million, per-capita grainland availability fell to 0.03 hectares**
 - **USA grainland in 2000: 0.21 hectares per person**

The Modern Age

- **The decline and fall of Western civilization**
 - **Lower birth rates in the West**
 - **Immigration from Asia and Africa**
 - **Higher birth rates of immigrants**
 - **Population explosion in Africa and Asia**
 - **Free trade and offshoring**

The Modern Age

- Feminism
 - 1970: Germaine Greer's "The Female Eunuch"
 - 1971: journalist Gloria Steinem founds the first first feminist magazine, "Ms Magazine"
 - 1973: Nancy Friday's "My Secret Garden"
 - 1974: Betty Dodson's "Liberating Masturbation: A meditation on Self Love"
 - 1978: more women than men enter college in the USA
 - 1981: Andrea Dworkin's "Pornography - Men Possessing Women"
 - 1982: Carol Gilligan's difference feminism
 - 1982: Madonna
 - 1989: Riot grrrrls in Seattle

The Modern Age

- Poststructuralist feminist theory
 - Simone de Beauvoir
 - Luce Irigaray: *Speculum of the Other Woman* (1974)
 - Julia Kristeva:
 - Helene Cixous: "The Laugh of the Medusa" (1975)

The Modern Age

- Gay Rights Movement
 - 1969: "Stonewall riots" and birth of the Gay Liberation Front
 - 1979: first gay rights march in the United States
 - 2001: same-sex marriage is recognized in Holland



The Modern Age

- **Revival Movements**
 - **Televangelism**
 - **World Youth Day (1985)**

The Modern Age

- **The role of government**
 - **Franklin Roosevelt (1930s): the New Deal**
 - **John Kennedy (1960): the New Frontier**
 - **Barry Goldwater (1964): do not reform government, reduce it (conservative agenda)**
 - **Ronald Reagan (1980s): "government is the problem not the solution"**

The Modern Age

- **Margaret Thatcher's revolution (1979-90)**
 - **Economic: restoring competitiveness of British economy**
 - **Fighting inflation**
 - **Austere program of industrial efficiency**
 - **Privatization of nationalized industries and services**
 - **Tax reduction**
 - **Constitutional: centralizing power and limiting the power of organized labor**
 - **Moral: praise of self-reliance and contempt for the unemployed**
 - **Consequence: forced transition from industrial economy to service economy**

The Modern Age

- **Francois Mitterrand (1981-95)**
 - **First socialist president**
 - **1983: Franco-German cooperation (the "European engine")**
 - **1983: Financial rigor and industrial competitiveness instead of socialist doctrine of state-controlled economy**
 - **1984: Transformation of the Common Market into a political and monetary Union**
 - **1986: Labor flexibility instead of union-controlled labor policies**
 - **Chronic unemployment**
 - **Muslim immigration and population growth**

The Modern Age

- **China/ After WWII**
 - **1971: China replaces Taiwan at the United Nations**
 - **1972: USA president Nixon meets with Mao**
 - **Issues: Vietnam, Korea, Taiwan**
 - **1973: Anti-Confucius campaign**
 - **1974: Zhou Enlai rehabilitates Deng Xiaoping**
 - **1975: Zhou Enlai announces the Four Modernizations**
 - **1975: Chiang Kaishek dies**
 - **1975: Pol Pot's “Khmer Rouge” seize power in Cambodia**
 - **1976: Mass demonstrations against the Party**
 - **1976: Zhou Enlai and Mao Zedong die and Hua Guofeng seizes power**

The Modern Age

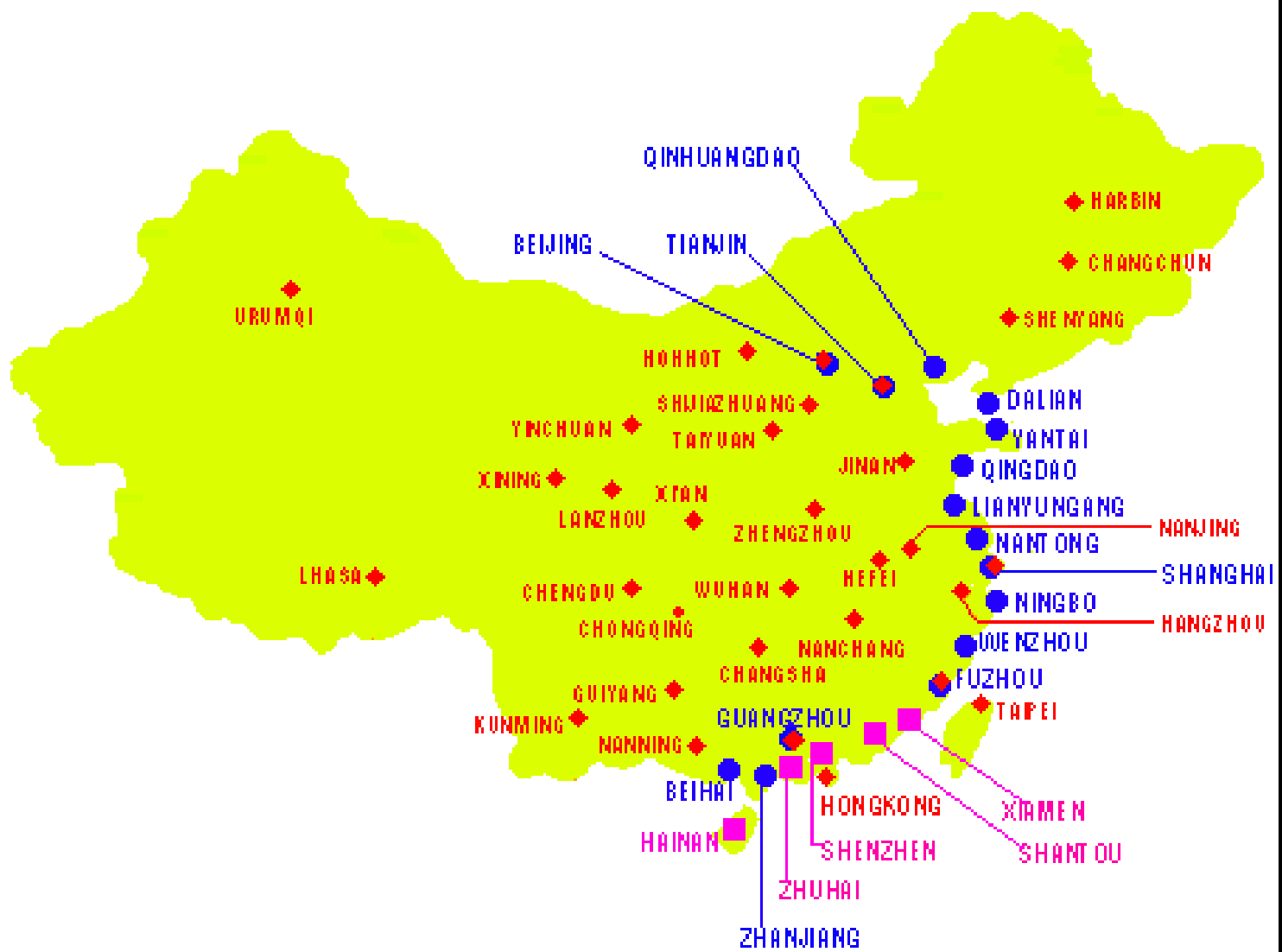
- **China/ After WWII**
 - **1978-81: Deng Xiaoping erodes Hua Guofeng's power and starts pseudo-capitalistic economic reforms**
 - **1978: Deng launches the Four Modernizations**
 - **1978: China plans 88 western-style universities**
 - **1978: Friendship treaty with Japan**
 - **1978: "Democracy Wall" protests (crushed in 1979)**
 - **1978: Special economic zones**
 - **1979: Border war with Vietnam following Vietnam's invasion of Cambodia**
 - **1980: Trial of the "Gang of Four", responsible for the Cultural Revolution, including Mao's wife**
 - **1981: Mao was 70% right and 30% wrong**
 - **1980s-1990s: End of cult of personality, emphasis on collective leadership - relatively anonymous presidents**

◆ MUNICIPALITIES AND CAPITALS OF 22 PROVINCES

● OPEN CITIES

■ SPECIAL ECONOMIC ZONES

◆ OTHER MAJOR CITIES



The Modern Age

- China/ After WWII
 - 1982: The population of China passes one billion
 - 1982: Deng's reforms
 - 1985: Jiang Zemin becomes mayor of Shanghai
 - 1986: Pro-democracy demonstrations by students
 - 1988: 6,000 joint ventures with foreign companies
 - 1989: Tiananmen Square demonstrations



The Modern Age

- China/ After WWII



Zhao Ziyang on 19 May 1989 in Beijing's Tiananmen Square

The Modern Age



Students mourning Hu Yaobang at Tiananmen Square in April 1989

The Modern Age

- China/ After WWII



The Modern Age

- China/ After WWII



The Modern Age

- Pakistan
 - An Islamic republic (1956)
 - Mostly a military dictatorship
 - Obsessed with fighting India (especially in Kashmir)
 - West Pakistan (mostly Punjabi) dominates East Pakistan (Bengali) economically and culturally
 - Urdu forced on Bangladesh and Bengali banned from offices
 - West Pakistan sees Bengalis as uncivilized
 - East Pakistan sees Punjabis as colonists/oppressors

The Modern Age

- **Pakistan**
 - **Ethnic cleansing dramatically reduces the Hindu, Buddhist and Christian populations**
 - **Sunni-Shiite religious strife kills tens of thousands**
 - **Destabilization of Afghanistan**
 - **Opportunistic alliance with the USA to repel the Soviet Union**
 - **Use of Islamic fighters against Pakistan's enemies (Afghanistan, India, Soviet Union)**
 - **Birthplace of the Taliban**

The Modern Age

- **India/ Pakistan**
 - **1971: West Pakistan (supported by USA and China) vs East Pakistan (supported by India and Soviet Union)**
 - **First victory of Hindus over Muslims in centuries**
 - **A woman (Indira Gandhi) beat a man (Yahya Khan)**
 - **Indira Gandhi proves to be a much better military leader than Nehru**
 - **1974: First nuclear bomb**
 - **1975: Peace in Kashmir**

The Modern Age

- **India/ Society**
 - **40% of rural India and 50% of urban India lives below the poverty line (1971)**
 - **Only 39.5% of men and 18.4% of women are literate (1971)**
 - **Nepotism and corruption are endemic**
 - **Condition of women unchanged (except in Kerala, where women's literacy is 60%)**
 - **India ranks 102nd in the world in per-capita income**
 - **Student protests against corruption (1974)**
 - **Railway strikes (1974)**

The Modern Age

- India/ Politics
 - 1971: Abolition of princely privileges
 - 1975: Indira Gandhi assumes quasi-dictatorial powers
 - Indira Gandhi appoints her son Sanjay Gandhi to political positions
 - Forced sterilization program (1976)
 - Demolition of slums (1976)
 - Ambedkar's movement of untouchables
 - Assam nationalists (1979-85)
 - Sikh nationalists in Punjab (1978-84)
 - 1984: Pogrom against Sikhs in Delhi

The Modern Age

- India/ Politics
 - Loss of power by Congress:
 - Asom Gana Parishad in Assam
 - Telugu Desam in Andhra Pradesh
 - Akali Dal in Punjab
 - Dravida Munnetra Kazhagam in Tamil Nadu
 - Communist Party in West Bengal
 - Bharatiya Janata Party everywhere
 - 1989: Beginning of the era of coalition governments, decentralization, anti-incumbency at state level and political instability at national level

The Modern Age

- India/ Politics
 - Caste drive politics
 - Yadavs in Uttar Pradesh and Bihar
 - Jats in Punjab and Haryana
 - Marathas in Maharashtra
 - Vokkaligas in Karnataka
 - Gounders in Tamil Nadu
 - 1989: Mandal Report increases the number of government jobs for lower castes
 - Dalit resurgence in Bihar
 - Decades of affirmative action have vastly expanded the castes that run the economy and the government

The Modern Age

- India/ Hindu-Muslim
 - Hindu nationalists of Bharatiya Janata Party (1980) + VHP + RSS + Shiv Sena
 - 1986: Muslim Women's Bill treats Muslim women differently (fewer rights)
 - 1986-92: Ayodhya temple/mosque riots
 - 1989-...: Kashmiri insurrection funded by Pakistan
 - 2002: Pogrom against Muslims in Gujarat

The Modern Age

- India/ Economy
 - 1985: Vishwanath Pratap Singh's liberalizing reforms
 - Boom of manufacturing
 - Boom of middle-class consumption (e.g. motorcycles and automobiles)
 - Famines in 1985 and 1987: agriculture still dependent on monsoon
 - Less than 50% of agricultural India has irrigation
 - Water, not oil, is the most important resource for India

The Modern Age

- India/ Economy
 - First US-style fortunes (Reliance conglomerate)
 - Boom of political corruption: Indian politicians who used to be the humblest in the world become the “new maharajas”
 - Alliance between politicians and organized crime in Uttar Pradesh and Bihar
 - Nepotism (many regional parties run by families)

The Modern Age

- India/ Foreign policy
 - 1987-90: Peace-keeping mission in Sri Lanka (“India’s Vietnam”)

The Modern Age

- Latin America
 - Mexico: most populous Spanish-speaking country in the world, political stability
 - Guatemala: mostly Indios
 - Cuba: communist
 - Venezuela: oil, mostly democratic
 - Colombia: rebel groups, drug cartels
 - Ecuador: highest population density
 - Argentina: mostly European (Spanish and Italian), literate
 - Chile: mostly European, mostly democratic
 - Peru: half European and half Indio, "forty families",

The Modern Age

- Latin America
 - Bolivia: mostly Indios, repeatedly lost territories to neighbors, illiterate, continuous coups
 - Paraguay: mostly Indios, illiterate
 - Uruguay: mostly European (Spanish and Italian), very literate
 - Brazil: melting pot (Portuguese, Italians, Japanese, Germans... 60% European)

The Modern Age

- The age of the impossible
 - East Asia adopts the Western ideology of scientific and technological progress
 - Germany and Japan (losers of World War II) overcome Britain and France (the old victorious empires) in the 1960s
 - China adopts capitalism in 1982
 - The Soviet Union collapses in 1989

The Modern Age

- Media

1971: Sony U-matic video-cassette recorder (VCR)

1972: Ray Tomlinson invents e-mail (1972)

1973: Martin Cooper at Motorola invents the cellular telephone

1978: the USA begins installation of the GPS

1980: CNN, the first cable tv devoted to world news

1981: MTV debuts on cable tv

1981: the compact disc (CD)

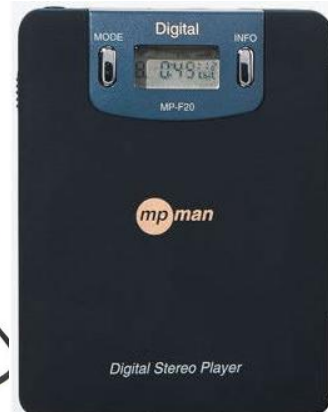
1989: Magellan Corporation introduces the first hand-held GPS receiver

1995: the DVD



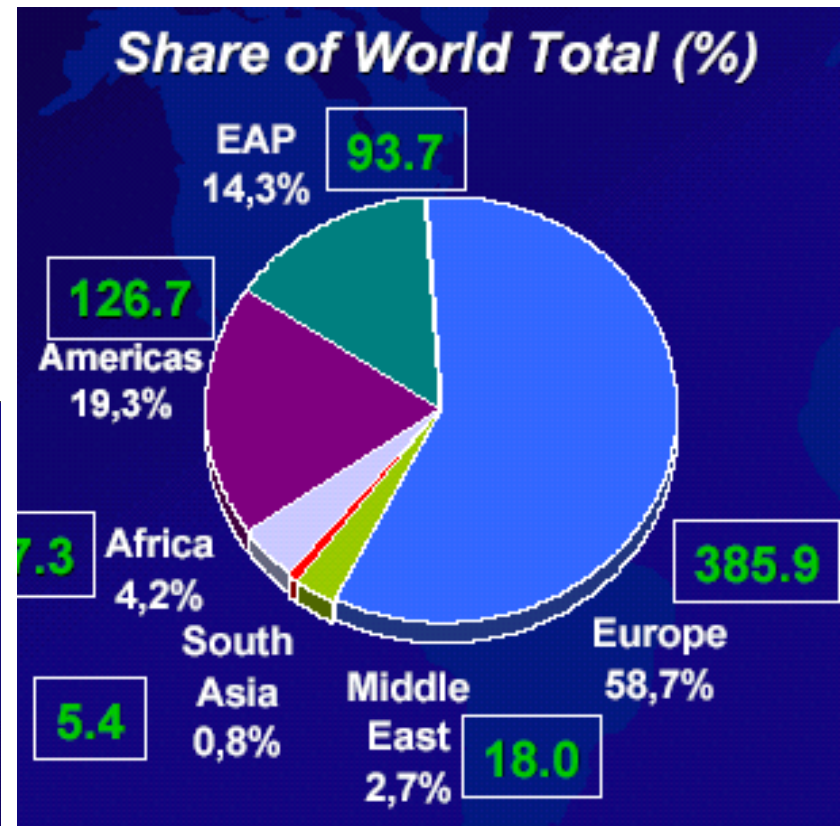
The Modern Age

- Media
 - Beyond the transistor radio:
 - 1969: Philips Radiorecorder (cassette recorder)
 - 1976: Marantz Superscope (the "boombox")
 - 1979: Sony Walkman (portable music player)
 - 1998: SaeHan MPMan (digital music player)



The Modern Age

- Transportation
 - Cheap transportation enables the age of mass tourism



(WTO 1999)

The Modern Age

- Transportation
 - 1970: The Boeing 747



The Modern Age

- Sport



The Modern Age

- Sport

- Running: Jesse Owens (USA, 1930s)
- Emil Zapotek (Czech, 1950s)
- Cycling: Fausto Coppi (Italy, 1950s)
- Auto racing: Manuel Fangio (Argentina, 1950s)
- Football: Pele (Brazil, 1960s)
- Swimming: Dawn Fraser (Australia, 1960s)
- Boxing: Cassius Clay (USA, 1960s)
- Cycling: Eddy Merckx (Belgium, 1970s)
- Swimming: Mark Spitz (USA, 1970s)
- Tennis: Martina Navratilova (Czech, 1980s)
- Football: Diego Maradona (Argentina, 1980s)
- Basketball: Michael Jordan (USA, 1980s)
- Track and field: Carl Lewis (USA, 1980s)
- Auto racing: Michael Schumacher (Germany, 1990s)
- Football: Lionel Messi (Argentina, 2000s)
- Tennis: Serena Williams (USA, 2000s)
- Running: Usain Bolt (Jamaico, 2000s)

The Modern Age

- **Computers**
 - The amount of random access memory in use worldwide increases from 1 Gbyte in 1966 to 10 Gbytes in 1971
 - 1968: Robert Dennard invents random access memory
 - 1969: Intel introduces the 1101, a 256-bit RAM
 - 1970: DEC introduces the PDP-11
 - 1971: Intel invents the micro-processor
 - 1972: Ray Tomlinson invents e-mail
 - 1974: the first personal computer, Altair 8800
 - 1977: Atari introduces the first video game console
 - 1977: Steve Jobs and Steve Wozniak develop the Apple II
 - 1981: IBM introduces the PC ("Personal Computer")
 - 1981: Osborne introduces the first laptop computer

The Modern Age

- **Calculators replace the slide rule that had been the main computing device for more than 200 years**



HP 35 (1972) (Computer History Museum, Mountain View)

The Modern Age

- PDP



DEC PDP-11 (1970
(Computer History Museum, Mountain View)

The Modern Age

- **Computers**

Altair 8800



"Commodore Amiga 1000" (1987)

IBM PC



Osborne 1



"Compaq Deskpro 386" (1986)



The Modern Age

- **Personal (Desktop) Computers**



Xerox Alto (1971), the first user interface with windows and mouse

(Computer History Museum, Mountain View)



Apple II (1977)
&
Macintosh



The Modern Age

- **Personal (Desktop) Computers**



Commodore PET (1977)



IBM PC (1981)

(Computer History Museum, Mountain View)

The Modern Age

- **Software**
 - **1979: Dan Bricklin develops Visicalc, a spreadsheet application for the Apple II**
 - **1981: the IBM PC runs DOS, an operating system developed by Bill Gates' Microsoft**
 - **1983: Jonathan Sachs develops Lotus 1-2-3, a spreadsheet application for DOS**
 - **1999: the world prepares for the new millennium amidst fears of computers glitches due to the change of date (Y2K)**
 - **1999: Microsoft is worth 450 billion dollars, the most valued company in the world**

The Modern Age

Internet

- 1969: The computer network ArpaNet has four nodes (three in California)
- 1972: Ray Tomlinson invents e-mail
- 1980: Usenet
- 1983: There are 563 computers linked to the ArpaNet
- 1984: The Domain Name Server is introduced to classify Internet addresses with extensions such as .com
- 1985: The Arpanet is renamed Internet
- 1990: There are 300,000 computers on the Internet
- 1990: Computer viruses spread over the Internet

The Modern Age

- Videogames
 - 1972: Magnavox's videogame console "Odyssey,"
 - 1975: Atari Pong (Nolan Bushnell and Alan Alcorn)
 - 1977: Atari 2600
 - 1978: Space Invaders (Toshihiro Nishikado), first blockbuster videogame
 - 1980: Pac-Man (Toru Iwatani)
 - 1981: Nintendo's Donkey Kong Ditty (Shigeru Miyamoto)
 - 1981: Atari Centipede (Ed Logg and Dona Bailey), first videogame to appeal to women
 - 1982: Pole Position, first major photorealistic videogame
 - 1983: Dragon's Lair (Rick Dyer and Don Bluth), an interactive animated film and first game on laserdisc

The Modern Age

- Videogames
 - Space Invaders



The Modern Age

- Videogames



Magnavox Odyssey's Shooting Gallery



Epoch TV Tennis/Electrotennis, 1975



Nintendo's Color TV Game 6



Nintendo's Color TV Game 15, 1977

The Modern Age

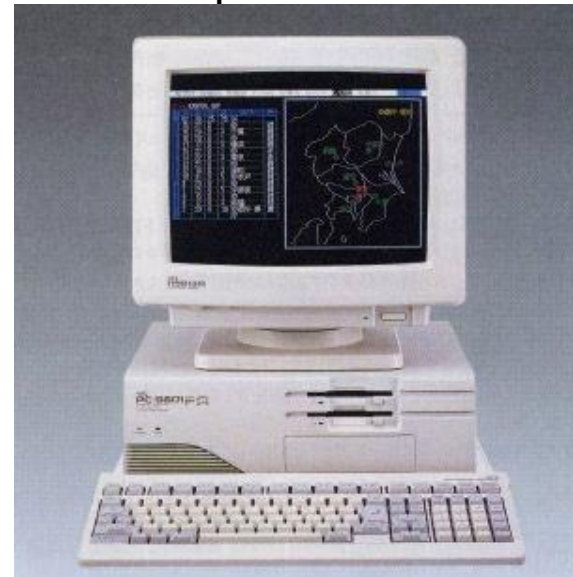
- Videogames



Sord M200



the Sharp MZ-80K



The NEC PC-9801



Toshiba MSX HX-10

The Modern Age

- Videogames



Game Arts' Thexder on the NEC PC-88



Nintendo Famicom

The Modern Age

- Videogames
 - 1985: Nintendo Entertainment System (Masayuki Uemura)
 - 1986: Atari Lynx, first portable game system
 - 1986: online virtual-reality game “Habitat” (Randy Farmer and Chip Morningstar) with “avatars”
 - 1989: Sega Mega-Drive/Genesis
 - 1989: Populous (Peter Molyneux), first “god game”

Biotech

Genetics

1973: Stanley Cohen and Herbert Boyer create the first recombinant DNA organism



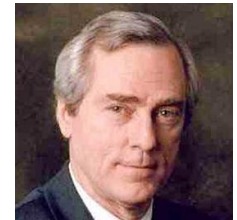
1976: Genentech, the first major biotech company

1977: Frederick Sanger publishes the first full DNA genome of a living being



1990: the Human Genome Project is launched

1990: William French Anderson performs the first procedure of **gene therapy**



Biotech

1992: Calgene creates the "Flavr Savr" tomato, the first genetically-engineered food to be sold in stores
1997: Ian Wilmut **clones** the first mammal, the sheep Dolly



2003: The Human Genome Project is completed

2006: Personal genomics (23andMe, Syapse, Genophen)



2010: Craig Venter and Hamilton Smith **reprogram** a bacterium's DNA

2010: Cheap printers for living beings (OpenPCR, Cambrian Genomics)

2012: Markus Covert **simulates** an entire living organism in software (Mycoplasma Genitalium)



2012: Crisp/Cas9 technique for genome editing

The Modern Age

- **Physics**
 - **1974: John Schwartz introduces Superstring Theory**
 - **1981: Alan Guth introduces the Inflationary Theory**

The Modern Age

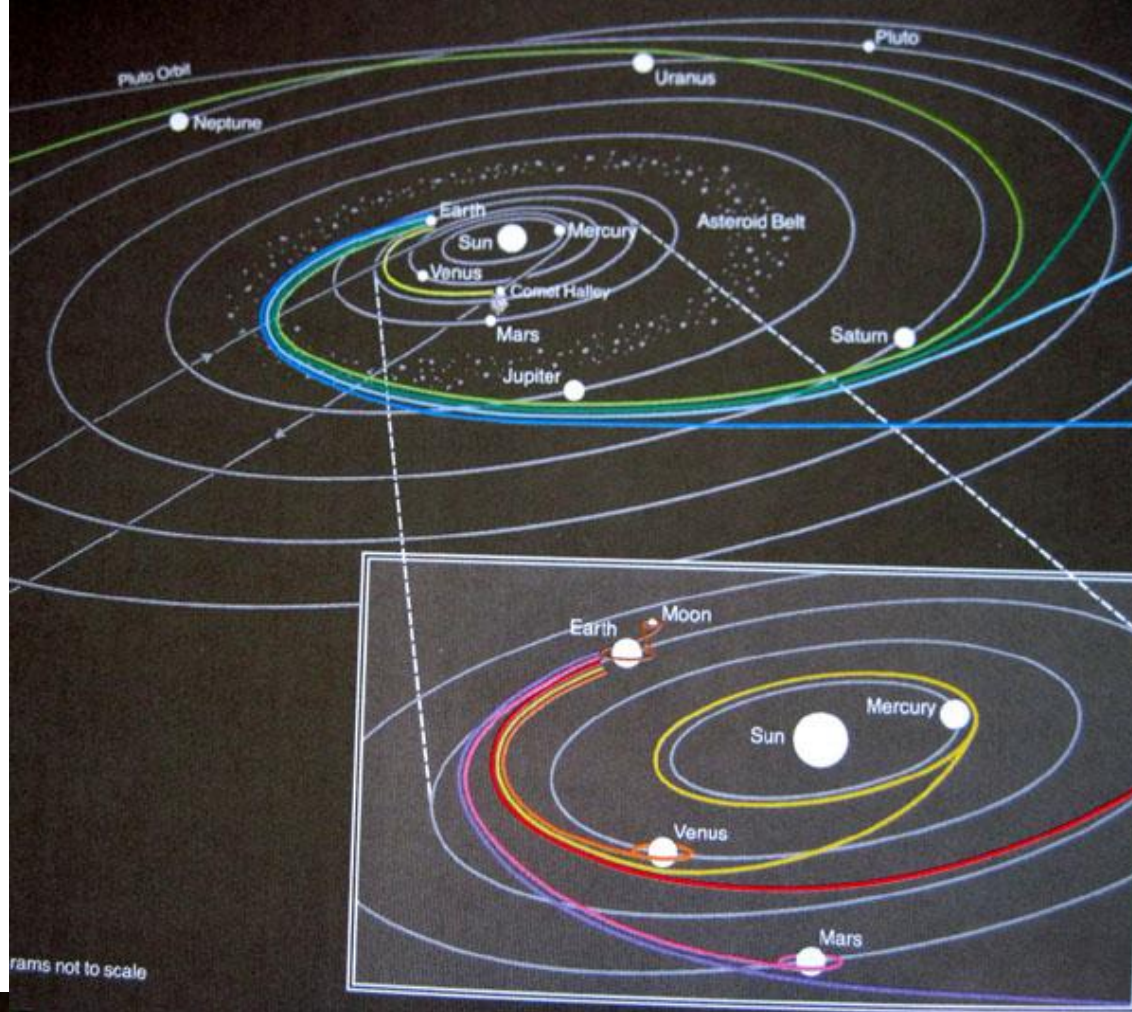
- **Physics**

- **1992: A NASA satellite finds huge ripples of matter near the edge of the universe, the largest (95 billion trillion kms in diameter) and most ancient (almost 15 billion old or 300,000 years after the big bang) structures in the universe**
- **1994: Astronomers discover an invisible object of 2.5 billion to 3.5 billion solar masses at the center of the galaxy M87 (first evidence of a black hole)**
- **1998: Adam Riess and Saul Perlmutter discover that the expansion of the universe is accelerating (dark energy)**
- **2001: the Voyager leaves the solar system**
- **2003: 95% of the universe is invisible**
- **2003: several unmanned space-crafts land on Mars**

What the Modern Age knew

- Space exploration
 - 1970: First spacecraft on Venus (Soviet)
 - 1971: First spacecraft on Mars (Soviet)
 - 1977: the USA launches the Voyager to reach other galaxies
 - 1981: the USA launches the first space shuttle
 - 1986: the USSR launches the permanent space station MIR
 - 1990: the Hubble space telescope is launched





National Geographic:
into the Unknown)

Orbits not to scale

- Mariner 2, Venus flyby 1962
Mariner 5, Venus flyby 1967
- Mariner 4, Mars flyby 1965
Mariner 6, Mars flyby 1969
Mariner 7, Mars flyby 1969
- Apollo 8, Manned Moon orbit 1968
Apollo 11, Manned Moon landing 1969
- Venera 7-16, (USSR) Venus flybys and landings 1970-83
Pioneer-Venus A, Venus orbit 1978
Pioneer-Venus B, Venus atmosphere probes 1978
- Mariner 9, Mars orbit 1971
Viking 1 and 2, Mars orbit and landing 1976
- Pioneer 10, Jupiter flyby 1973
- Pioneer 11, Jupiter flyby 1974, Saturn flyby 1979
- Mariner 10, Venus flyby 1974, Mercury flybys 1974, 1975
- Voyager 1, Jupiter flyby 1979, Saturn flyby 1980
- Voyager 2, Jupiter flyby 1979, Saturn flyby 1981, Uranus flyby 1986, Neptune flyby 1989
- Giotto, Suissei, VeGa 1 and 2, Comet Halley flyby 1986

What the Modern Age knew

- E.S.P.
 - Egyptian magicians (2700 BC)
 - Greek oracles (700 BC)
 - Jewish Kabbalah
 - Clairvoyance
 - Magicians
 - Miracles
 - Nostradamus' prophecies (1555)
 - Mediums
 - London's "Society for Psychical Research" (1882)
 - Hypnosis
 - Telepathy
 - Telekinesis
 - Levitation

What the Modern Age knew

- U.F.O.'s
 - 1947: first widely publicized sighting of a UFO
 - Flying saucers
 - Green humanoids
 - S.E.T.I.

What the Modern Age knew

Ideas

- Post-modernism
- Consciousness (Brain, Mind, Cognition)
- Matter (Cosmology, Elementary Particles, Self-Organization)
- Language (Pragmatics, Metaphor)
- Life (Ecology, Sociobiology, Memetics, Gaia)

What the Modern Age knew

- **Post-modernism**
 - **Enlightenment**
 - **French rationalist tradition founded by Descartes**
 - **Reason as the source of knowledge**
 - **Knowledge as the source of progress**
 - **Progress founded on science is good**
 - **Reason applied to society leads to egalitarian social order**

What the Modern Age knew

- Post-modernism/ precursors
 - Pessimism/ Decline of Western Society
 - Toynbee: collapse of the Enlightenment's rationalist project
 - Nietzsche
 - Heidegger
 - Wittgenstein
 - Spengler
 - Georges Bataille: rejection of reason and progress

What the Modern Age knew

- Post-modernism
 - Modernism
 - The state of society opposed to traditional values (eg religion, customs)
 - Continuous and frantic innovation/novelty
 - Rationalization, secularization, industrialization, urbanization and bureaucratization of society
 - The bourgeoisie as the solution
 - Media
 - Technology
 - Consumer society/ Commodification

What the Modern Age knew

- Post-modernism
 - Modernism
 - Structuralism: culture and society analyzed in terms of codes and rules, i.e. as linguistic structures (“discourse”)
 - Structures are governed by implicit codes (eg parole and langue)
 - The mind itself as an innate universal structure regulated by its own code (language, myth)
 - Sociology: Auguste Comte and Emile Durkheim
 - Linguistics: Ferdinand de Saussure
 - Anthropology: Claude Levi-Strauss
 - Psychoanalysis: Jacques Lacan
 - Semiotics: Roland Barthes
 - Marxism: Louis Althusser

What the Modern Age knew

- Post-modernism
 - Critique of modernism
 - Modernism promises liberation but brings about new forms of oppression
 - Exploitation of workers
 - Colonialism

What the Modern Age knew

- Post-modernism
 - Reaction to modernism
 - Bohemian life style (the opposite of the regulated lifestyle of the factory)
 - Subcultures
 - Anticapitalist ideologies
 - Phenomenology
 - Existentialism
 - Difference and fragmentation instead of totalization of knowledge/culture
 - Breakdown of the high-culture low-culture distinction
 - New art forms (collage, quotation, play)

What the Modern Age knew

- Post-modernism
 - Modernist epistemology: subject and object are distinct, and the subject can objectively represent the object
 - Post-modernist epistemology: perception of the object by the subject is mediated by socially-constructed discourse

What the Modern Age knew

- **Post-modernism**
 - **Reaction to modernism**
 - **Science and reason no longer viewed as morally good**
 - **Multiple sources of power and oppression in capitalist society**
 - **Education no longer viewed as unbiased but as politicized**
 - **Knowledge is power**
 - **Feminism, gay rights, ecology**
 - **Political upheavals: student riots (Berkeley 1964, Paris 1968), “power to the imagination”**
 - **The mind is created by a historical process and is therefore different in different periods**
 - **The bourgeoisie as the problem**

What the Modern Age knew

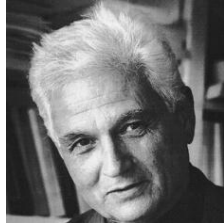
- **Postmodernism in France**
 - **1950s/60s: Rapid economic growth, industrialization, urbanization, consumerism**
 - **New forms of communication, information and energy**
 - **Technology and media democratize knowledge and culture**
 - **Globalization**

What the Modern Age knew

- **Postmodernism in France**
 - **The signifier is more important than the signified**
 - **Meaning is unstable: at any point in time the signified is merely a step in a never-ending process of signification**
 - **Meaning is socially constructed**
 - **There are no facts, only interpretations**
 - **Accelerating proliferation of signs create new society, culture and psychology**
 - **Science of chaos, indeterminacy, complexity**
 - **Diversity, fragmentation and heterogeneity**

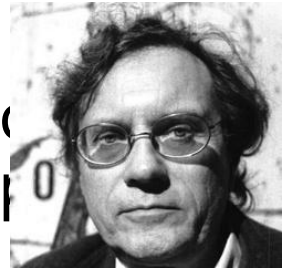
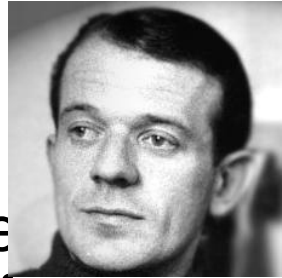
What the Modern Age knew

- **Postmodernism in France**
 - **Roland Barthes: Mythologies provide propaganda for the consumer society**
 - **Guy Debord: The “society of the spectacle” masks a condition of alienation and oppression**
 - **Jacques Derrida: Dissemination of meaning, the binary metaphysics of subject/object**



What the Modern Age knew

- Postmodernism in France
 - Gilles Deleuze: Rhizomatic thought (dynamic, heterogeneous, chaotic) instead of the Arborescent thought (hierarchical, centralized, deterministic) of Modernism
 - Felix Guattari: There is neither subject nor object of desire, just desire as the primordial force that shapes society and history
 - Jean Baudrillard: A meaningless society of signs in which the real and the simulation are indistinguishable
 - Jean-Francois Lyotard: The end of the grand narratives



What the Modern Age knew

- Classics of Postmodernism
 - Paul Ricoeur: “The Symbolism of Evil” (1960) - hermeneutic phenomenology
 - Roland Barthes: “Mythologies” (1962) - semiotics
 - Amitai Etzioni: “The Active Society” (1968) - sociology
 - Ihab Hassan: “The Dismemberment of Orpheus” (1971) – literature
 - George Steiner: “In Bluebeard’s Castle” (1971)
 - Michel Foucault: “The Archeology of Knowledge” (1972)
 - Gilles Deleuze & Felix Guattari: “Anti-Oedipus” (1972) Jacques Derrida: “Speech and Phenomena” (1973)
 - Guy Debord: “The Society of the Spectacle” (1976)
 - Jean Baudrillard: “Simulacra and Simulation” (1981)
 - Jean-Francois Lyotard: “The Postmodern Condition” (1979)

What the Modern Age knew

- Postmodernism in literature
 - Jorge Luis Borges: "Pierre Menard, Author of the Quixote" (1939)
 - Samuel Beckett
 - Vladimir Nabokov
 - William Gaddis
 - John Hawkes
 - William Burroughs
 - Kurt Vonnegut
 - John Barth
 - Donald Barthelme
 - Don DeLillo
 - Thomas Pynchon

What the Modern Age knew

- Niels Jerne (1968)
 - Immune system as a Darwinian system
 - The immune system routinely manufactures all the antibodies it will ever need
 - When the body is attacked by foreign antigens some antibodies are selected
 - A concept chosen by the environment among a pre-existing array of concepts
 - Mind manufactures chaotic mental events that the environment orders into thought
 - Socrates: all learning consists in being reminded of what we already know

What the Modern Age knew

- **Niels Jerne (1968)**
 - **The genes encode a "library". The environment picks up a specific book**
 - **The mind already knows the solution to all the problems that can occur in the environment in which it evolved over millions of years**
 - **The mind knows what to do, but it is the environment that selects what it actually does**

What the Modern Age knew

- Quarks (1963)
 - Protons and neutrons are made of 18 quarks (Murray Gell-Man) held together by gluons
 - Six leptons: the electron, the muon, the tau and their three neutrinos
 - Four fundamental forces (gravitation, electromagnetism, strong and weak)
 - Virtual particles (bosons) mediate the four fundamental forces: (photon, eight gluons, three weak bosons, graviton?)
 - Elementary particles: leptons, quarks and their anti-particles (total of 48) plus 12 bosons (total of 60)

What the Modern Age knew

- **Standard model**
 - **Fermions (spin $1/2$, $3/2$ etc.) make up matter**
 - **Bosons (particles with integer spin) are force carriers**
 - **Hadrons (neutron, proton, etc) are made up of quarks in groups of two (mesons, containing a quark/antiquark pair) or three (baryons)**

THE STANDARD MODEL

	Fermions			Bosons	
Quarks	u up	c charm	t top	γ photon	Force carriers
	d down	s strange	b bottom	Z Z boson	
Leptons	ν_e electron neutrino	ν_μ muon neutrino	ν_τ tau neutrino	W W boson	
	e electron	μ muon	τ tau	g gluon	

Higgs^{*}
boson

*Yet to be confirmed

Source: AAAS

What the Modern Age knew

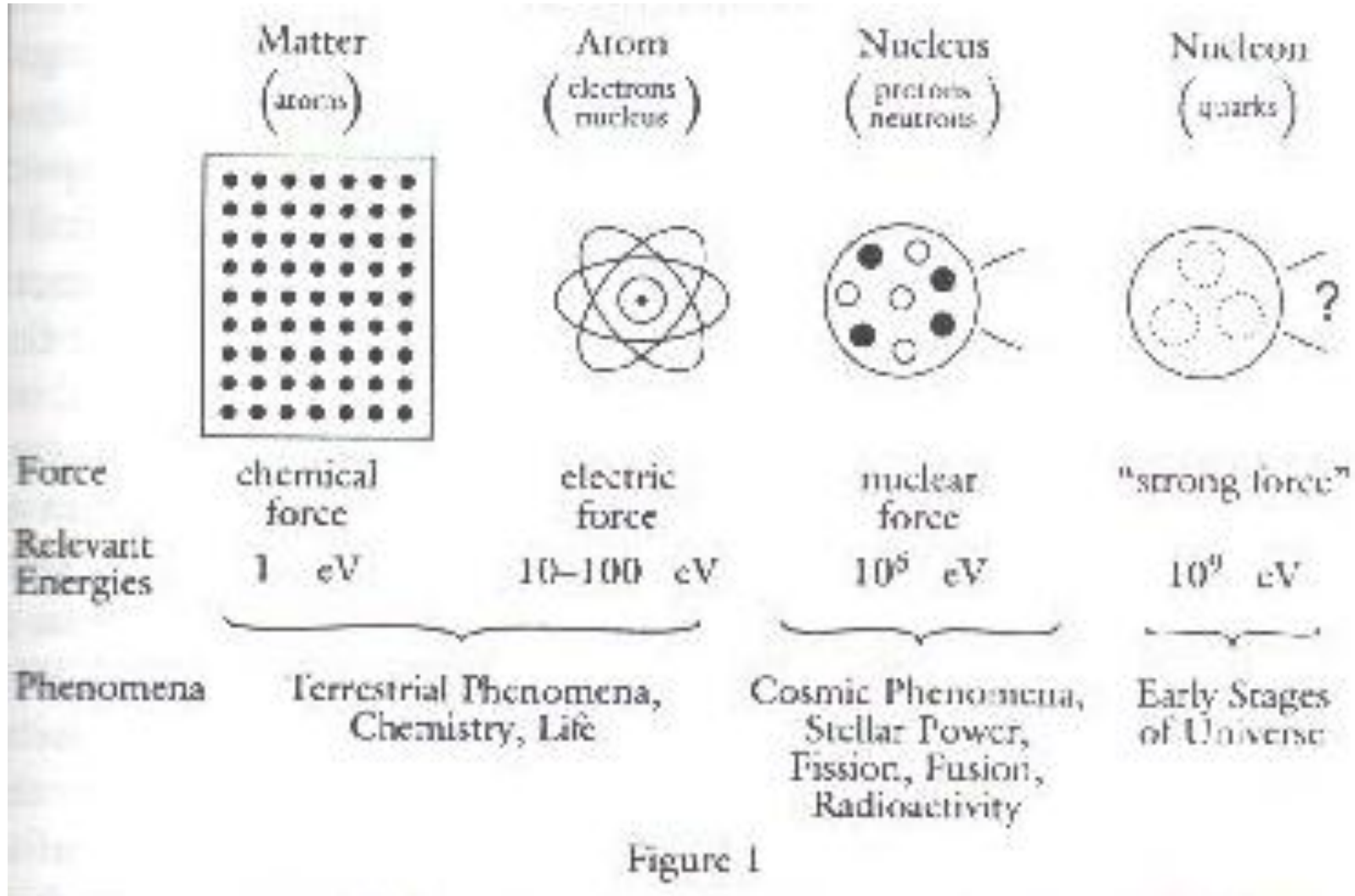
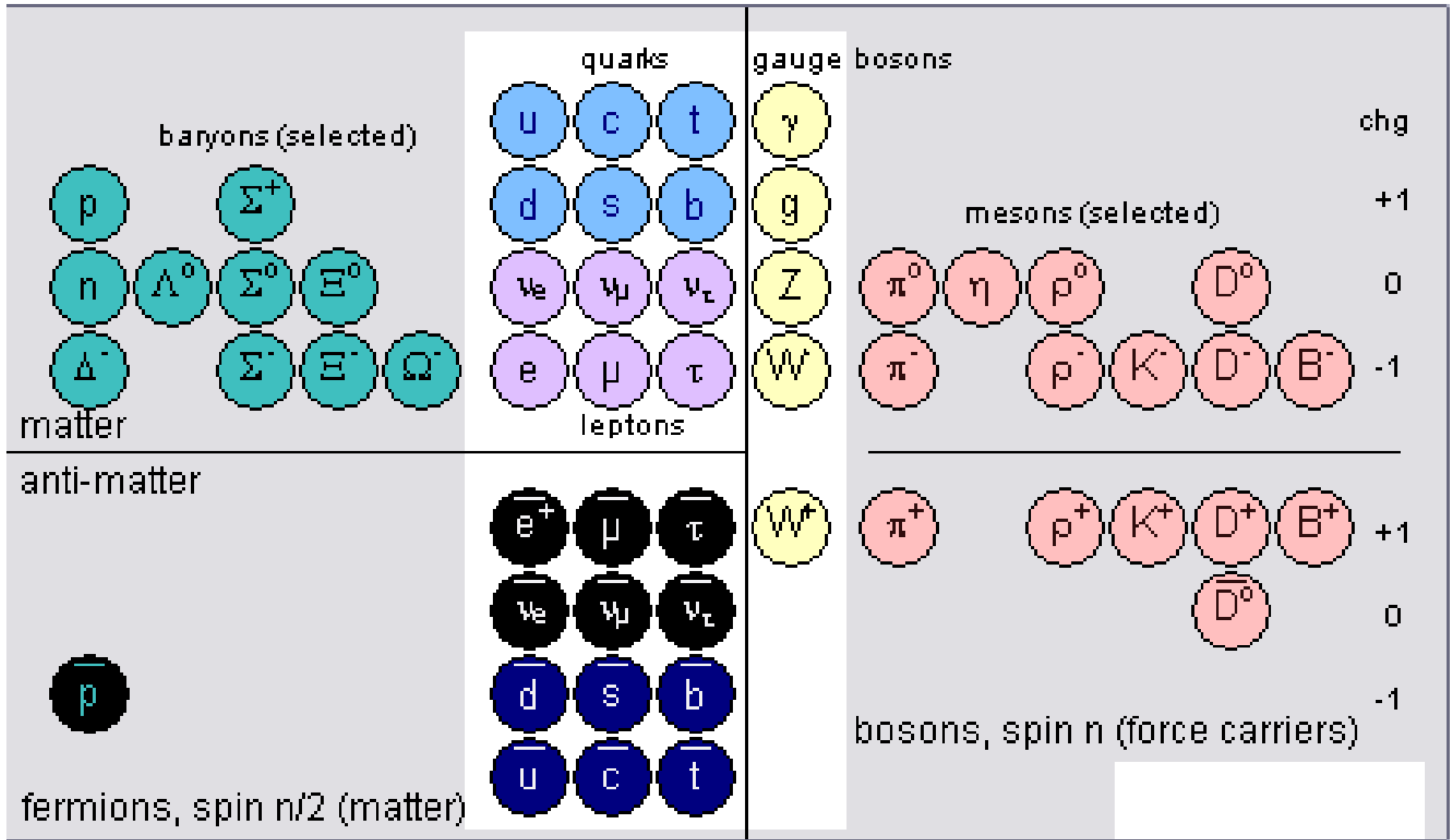


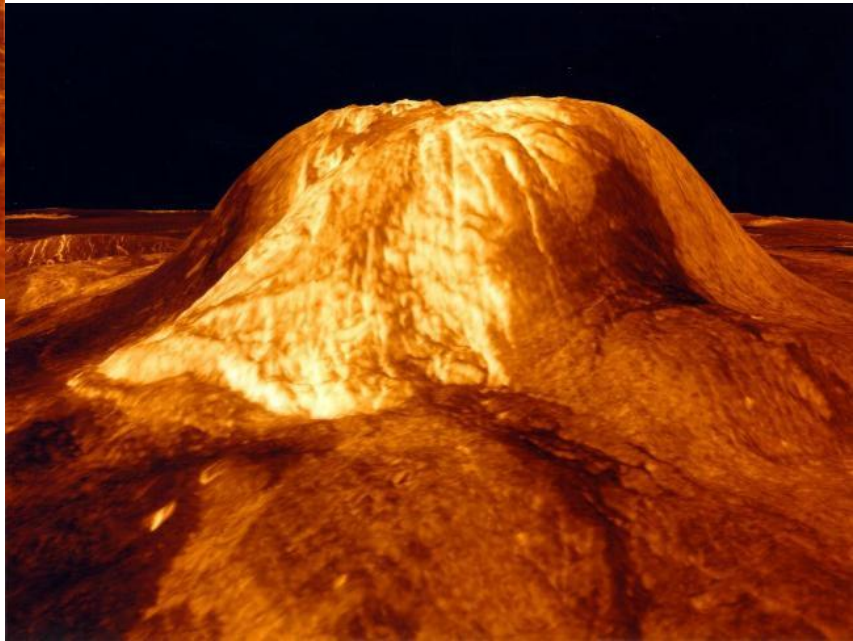
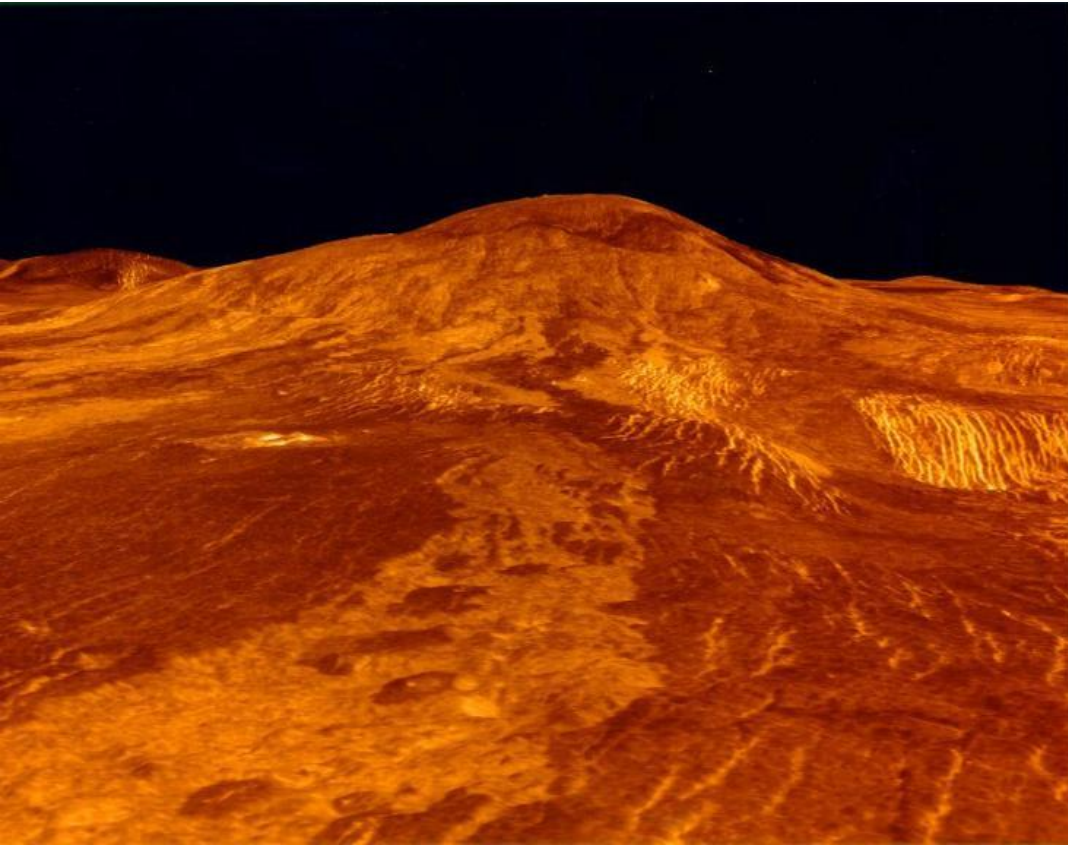
Figure 1

What the Modern Age knew

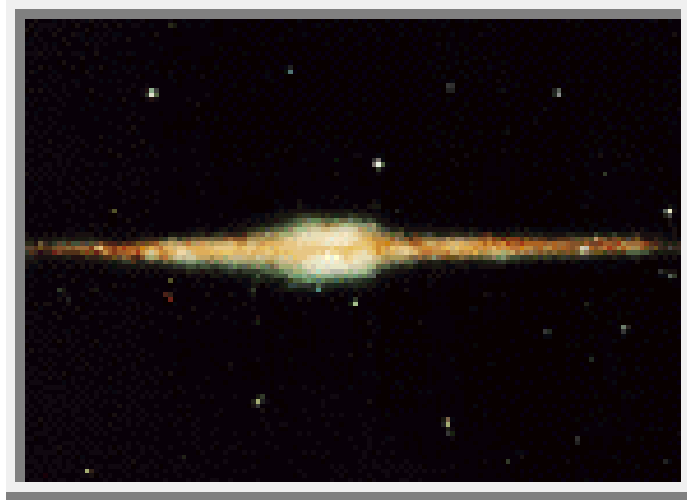
Standard Model



Venus



Astronomy



Milky Way



Solar planets

What the Modern Age knew

- Gilles Deleuze (1969)
 - Rediscovery of Nietzsche's critique of Western civilization
 - Demystifying rationalism
 - Nomadic thought instead of dialectical thought
 - Philosophy of difference and repetition adds a category of "difference" to Kant's categories
 - Multiplicity of semiotic levels
 - Rhizomatic thought (dynamic, heterogeneous, chaotic) instead of the Arborescent thought (hierarchical, centralized, deterministic) of Modernism

What the Modern Age knew

- Gilles Deleuze (1969)
 - "The real is not impossible, it is simply more and more artificial"

What the Modern Age knew

- Gilles Deleuze (1969)
 - The West was dominated by “disciplinary societies” in the 18th/19th centuries that created vast closed spaces (school, hospital, prison, barracks, factory), and is now dominated by societies of control that are characterized by metastable states instead of closed spaces (e.g., corporations instead of factories)
 - Central role of marketing

What the Modern Age knew

- Louis Althusser (1970):
 - History is overdetermined: too many factors contribute to a historical event that it is impossible to determine its “cause”
 - Ideological state apparatus (schools, churches, families, media) mold the psychology of individuals

What the Modern Age knew

Stein Rokkan (1970)

- Major historical discontinuities in Western Europe:
 - the building of nations
 - the reformation
 - the French Revolution
 - the industrial revolution
- Social cleavages that they originated in the modern democratic states :
 - Center–periphery
 - State–church
 - Land–industry
 - Worker–employer

What the Modern Age knew

- John Rawls (1971):
 - Rational definition of justice
 - The principles that one would agree with if s/he were not aware of her/his strengths and weaknesses (the “veil of ignorance”):
 - Maximum individual freedom compatible with other people’s freedom
 - Inequalities are justified only when the least advantaged individuals maximally gain from them
 - redistribution of wealth to ensure fair equality of opportunity to benefit from inequalities
 - Justice as fairness (just institutions)

What the Modern Age knew

- John Rawls (1971):
 - First priority: maximizing equal basic liberties
 - Second priority: distribution of income
 - Distribution of income is not necessarily equal: the ideal is a distribution that maximizes the welfare of the least advantaged individuals

What the Modern Age knew

- **Jacques Monod (1971):**
 - **Life is a physical and mathematical phenomenon**
 - **Only accidents can produce mutations**
 - **Chance is the only source of creation**
 - **Humans are a mere accident of nature**
 - **Evolution does not apply only to life**
 - **The entire universe is accidental**

What the Modern Age knew

- **John Rawls (1971):**
 - **The state must ensure a redistribution of wealth and income to provide those least favorite by birth with the means to improve their conditions**

What the Modern Age knew

Ivan Illich

- **“Deschooling Society” (1971) against institutionalized education,**
- **"Tools for Conviviality" (1973) against the technocracy of institutionalized specialized knowledge**
- **“Medical Nemesis” (1975) against Western medicine**
- **Conviviality: convivial tools as opposed to machines**

What the Modern Age knew

- **Saul Kripke (1972):**
 - **What is necessarily or possibly true**
 - **Modal logic with four operators: true, false, possible, necessary**
 - **A property is necessary if it is true in all worlds, a property is possible if it is true in at least one world.**
 - **False sentences may have different intensions (false but possible, false and impossible)**
 - **Kripke's semantics can interpret all sentences that can be reduced to "it is possible that" and "it is necessary that"**
 - **The truth value of a sentence is always relative to a particular world**

What the Modern Age knew

- **Saul Kripke (1972):**
 - **A necessary truth is one that is true in all possible worlds (e.g., $2+2=4$)**
 - **A possible truth is one that is true in some world (e.g., 'I am a millionaire')**
 - **A proposition does not have a truth value, but a set of truth values, one for each possible world**
 - **Tarski's theory is purely extensional (for each model the truth of a predicate is determined by the list of objects for which it is true), whereas Kripke's modal logic is intensional.**

What the Modern Age knew

- **Saul Kripke (1972):**
 - Proper names and names of natural kinds are “rigid designators”, i.e. in every possible world they designate the same object
 - The object that the name designate is not necessarily the apparent referent, but the object that was the original referent when the name was introduced
 - Names are linked to their referents through a causal chain
 - If a scientist discovered that water is not H₂O, water would still be called water and would still be what it is today

What the Modern Age knew

- **Felix Guattari (1972)**
 - **Micropolitics of desire**
 - **Schizoanalysis: the subject is a nomadic desiring machine**
 - **Desire is a dynamic endless process (Nietzsche's will to power)**
 - **There is neither subject nor object of desire, just desire as the primordial force that shapes society and history**
 - **Society "codes" desire in order to control it**
 - **Freud + Marx + Nietzsche**

What the Modern Age knew

- Gregory Bateson (1972)
 - The physical world is an information system.
 - Biological evolution is based on communication
 - Nature is a set of information systems interacting with each other
 - The individual is a cybernetic system coupled with its environment Individual minds are only part of a larger mind

What the Modern Age knew

- Gregory Bateson (1972)
 - Evolution of ideas

What the Modern Age knew

- **Brandon Carter (1973):**
 - **Anthropic principles: our very existence as intelligent creatures constrains the universe to be what it is (if just one of the fundamental constants were different, we wouldn't exist)**
 - **Weak Anthropic Principle (WAP): “the observed values of all physical and cosmological quantities are not equally probable but they take on the values restricted by the requirement that there exist sites where carbon-based life can evolve and by the requirement that the universe be old enough for it to have already done so.”**

What the Modern Age knew

- **Brandon Carter (1973):**
 - **Strong Anthropic Principle (SAP): “the Universe must have those properties which allow life to develop within it at some stage in its history”**
 - **Participatory Anthropic Principle : we are necessary to the existence of the universe, as it takes an intelligent observer to collapse the universe’s waves of probabilities into concrete reality**
 - **Final Anthropic Principle: once the universe has brought intelligence into being, it will never die out**
 - **Life in this universe must necessarily arise given the way it is construed**
 - **This universe has been designed for life to arise**

Death Penalty

- **Abolition of the death penalty**

- **Sweden 1921**
- **Italy 1947**
- **Israel 1954**
- **Britain 1973**
- **Canada 1976**
- **Spain 1978**
- **Brazil 1979**
- **Peru 1979**
- **France 1981**
- **Argentina 1984**
- **Australia 1985**
- **Germany 1987**
- **Poland 1997**
- **Chile 2001**
- **Turkey 2002**

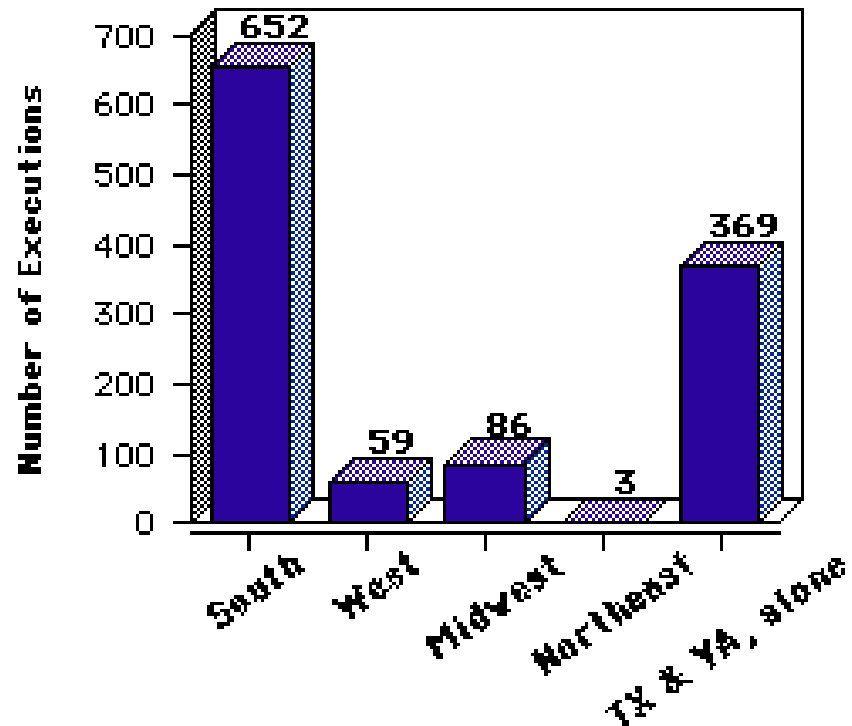
Death Penalty

- **2002**
 - **112 countries which have abolished the death penalty in law or practice**
 - **76 countries have abolished the death penalty for all crimes**
 - **16 countries have abolished the death penalty for all but wartime crimes**
 - **20 countries retain the death penalty in law but have not carried out any executions for the past 10 years**
 - **83 countries retain and use the death penalty**

Death Penalty

- **2001: some 3048 prisoners were executed in 31 countries, of which 90% in just four countries: China, Iran, Saudi Arabia and the USA**
- **2002: some 1,526 people were executed in 31 countries, of which 81% in China, Iran and the USA**
 - **China: 1,060**
 - **Iran: 113**
 - **USA: 71**
 - **Saudi Arabia: 48**
 - **Sudan: 40**
 - **Vietnam: 34**
 - **Tajikstan: 28**
 - **Egypt: 17**

USA, 1976-2002



What the Modern Age knew

- **Karl Otto Apel (1973)**
 - **Kant's a-priori is in the structure of language, not in the mind**
 - **Ethics grounded on the a-priori to shelter it from relativism**
 - **Language is itself the "ultimate foundation"**
 - **Language is a "communicative action between speakers" (a` la Austin)**
 - **Communicative action means the achievement of a consensus between speaker and hearer**
 - **The a-priori is "public", not solipsistic, because language language is social in nature**

What the Modern Age knew

- **Wilson Edward Osborne (1975)**
 - **Sociobiology**
 - **The biological basis of social behavior**
 - **The social behavior of animals and humans can be explained from the viewpoint of evolution**
 - **Behavior is determined by the genome**

What the Modern Age knew

- **Jerry Fodor (1975)**
 - **”Representational theory of the mind”**
 - **The mind is a symbolic processor**
 - **Mental representations are symbols, which are purely syntactic**
 - **The mind is endowed with a set of rules (a language of thought, or “mentalese”) to operate on such representations**
 - **Mental life is due to the processing of symbols**

What the Modern Age knew

- **Paul Grice (1975):**
 - **The speaker and the hearer cooperate**
 - **Language has meaning to the extent that some conventions hold within the linguistic community**
 - **The speaker wants to be understood and cause an action**
 - **Conversational implicature: what a speaker implies**
 - **Four maxims help the speaker say more than what she is saying**
 - **There is more to a sentence than its meaning: a sentence is "used" for a purpose**

What the Modern Age knew

- **Julian Jaynes (1977):**
 - **Ancient texts were composed by nonconscious minds**
 - **Human beings were guided by "hallucinations" (eg, God)**
 - **Hallucinations would form in the right hemisphere of the brain and would be communicated to the left hemisphere of the brain, which would then receive them as commands**
 - **Language did not serve as conscious thought: it served as communication between the two hemispheres of the brain**

What the Modern Age knew

- **Julian Jaynes (1977):**
 - **The bicameral mind began breaking down under the pressure caused by the complexity of the environment**
 - **The hallucinated voices no longer provided automatic guidance for survival**

What the Modern Age knew

- **Julian Jaynes (1977):**
 - **Consciousness was invented by human beings through a process that entailed the loss of belief in gods**
 - **Awareness of an action tends to follow the action**
 - **Awareness of an action bears no influence on the outcome**
 - **Consciousness requires metaphors and analogy**
 - **Metaphors and analogies map the functions of the right hemisphere into the left hemisphere and make the bicameral mind obsolete**

What the Modern Age knew

- **Julian Jaynes (1977):**
 - **Consciousness expanded by creating more and more metaphors and analogies**
 - **Ultimately, consciousness is a metaphor-generated model of the world**

What the Modern Age knew

- **Giovanni Paolo II (1978), first non-Italian Pope in 455 years**
 - **1979: visits Poland and encourages uprising against communist regime**



What the Modern Age knew

- **Nelson Goodman (1978)**
 - **Science, art and philosophy are only languages, systems of rules to manipulate symbols in order to construct worlds**

What the Modern Age knew

- **Nelson Goodman (1978)**
 - **"Constructivism": the real world is a product of a symbolic mind (it does not pre-exist it)**
 - **There is no perception without conception**
 - **The world in which we live is created for us by symbolic systems such as language**
 - **Worlds can be created by a work of art (e.g., a novel), a scientific theory or just ordinary life (the commonsense world of houses and markets and workplaces)**
 - **We construct new worlds out of old worlds**
 - **What exists is what is thought**

What the Modern Age knew

- Nelson Goodman (1978)
 - No one world is more real than the others
 - Multiple (and often conflicting) worlds co-exist all the time, but they do not occupy the same space and the same time

What the Modern Age knew

- In-vitro fertilization (1978)
 - Louise Brown is the first baby born via in-vitro fertilization (technique invented by Patrick Steptoe and Robert Edwards)



What the Modern Age knew

- Reinhart Koselleck (1979)
 - Space of experience: past natural or cultural events that a person remembers in the present (the past made present)
 - Horizon of expectation: the unfolding of the array of actions that one can now undertake (the future made present)
 - The space of experience and the horizon of expectation mutually condition each other.

What the Modern Age knew

- Jean-François Lyotard (1979)
 - Postmodernism
 - Metaphysics is pointless (postmodernism is “incredulity towards metanarratives”)
 - The rational self (capable of analyzing the world) is a fiction (self, is like language, a layer of meanings that can be contradictory)
 - No universal narrative in postmodern world

What the Modern Age knew

- Jean-François Lyotard (1979)
 - Metanarratives, or “grand narratives” (dominant ideologies) provide a 'credible` purpose for knowledge, science, and technology in advanced capitalist societies (e.g., knowledge is produced for its own sake)
 - Postmodernist thought must question, critique, and deconstruct metanarratives
 - Postmodernist thought must prefer mini-narratives that are "provisional, contingent, temporary, and relative”
 - Postmodern breakdown or fragmentation of beliefs and values

What the Modern Age knew

- Jean-François Lyotard (1979)
 - Anti-theoretical stance: attack against totalizing/universalizing theories and defense of a pluralism of domains, each with its own autonomy
 - Theory paralyzes the flow of desire
 - The flow of desire is the main actor in the world (“libidinal economics”)
 - Images and figures (not language i.e. theory) are the primary vehicle of desire
 - Desire is repressed by social structures (family, school, workplace, economy, state)
 - Similar to Deleuze-Guattari’s micropolitics of desire + Nietzsche’s vitalism

What the Modern Age knew

- Jean-François Lyotard (1979)
 - Pseudo-marxian theory of desire
 - Desire creates a world of objects
 - Then desire is becomes alienated from that world
 - Then desire struggles for emancipation from that world

What the Modern Age knew

- Jean-François Lyotard (1979)
 - Modern knowledge (Heisenberg, Goedel, Kuhn) “is producing not the known but the unknown”
 - Science cannot explain some domains, one of them being the self
 - Real knowledge is produced by dissent not consensus: by questioning paradigms and inventing new ones
 - In the post-modern world it is technology and knowledge that enforce social order, and both are driven by capitalism

What the Modern Age knew

- Jean-François Lyotard (1979)
 - “Deconstruction is only the negation of the negation, it remains in the same sphere, it nourishes the same terrorist pretension to truth”

What the Modern Age knew

- Jean-François Lyotard (1979)
 - “Along with the hegemony of computers comes a certain logic, and therefore a certain set of prescriptions determining which statements are accepted as "knowledge" statements... Knowledge is and will be produced in order to be sold, it is and will be consumed in order to be valorised in a new production: in both cases, the goal is exchange... It is widely accepted that knowledge has become the principle force of production”

What the Modern Age knew

- Jean-François Lyotard (1979)
 - “In the postindustrial and postmodern age, science will maintain and no doubt strengthen its preeminence in the arsenal of productive capacities of the nation-states. Indeed, this situation is one of the reasons leading to the conclusion that the gap between developed and developing countries will grow ever wider in the future.”

What the Modern Age knew

- Fernand Braudel (1979)
 - Traditional history was built around the acts and facts of "great men"
 - L'"Histoire Totale" focuses on the forces that shape societies
 - Geography and economics
 - The Ecole des Annales founded in 1929 by Marc Bloch and Lucien Febvre

What the Modern Age knew

- **Francisco Varela (1979)**
 - **Cognition as embodied action (or "enaction")**
 - **The world is not a given, but reflects the actions in which we engage, it is "enacted" from our actions (structural coupling)**
 - **Organisms do not adapt to a pre-given world**
 - **Organisms and environment mutually specify each other**
 - **Life is an elegant dance between the organism and the environment.**
 - **The mind is the tune of that dance.**

What the Modern Age knew

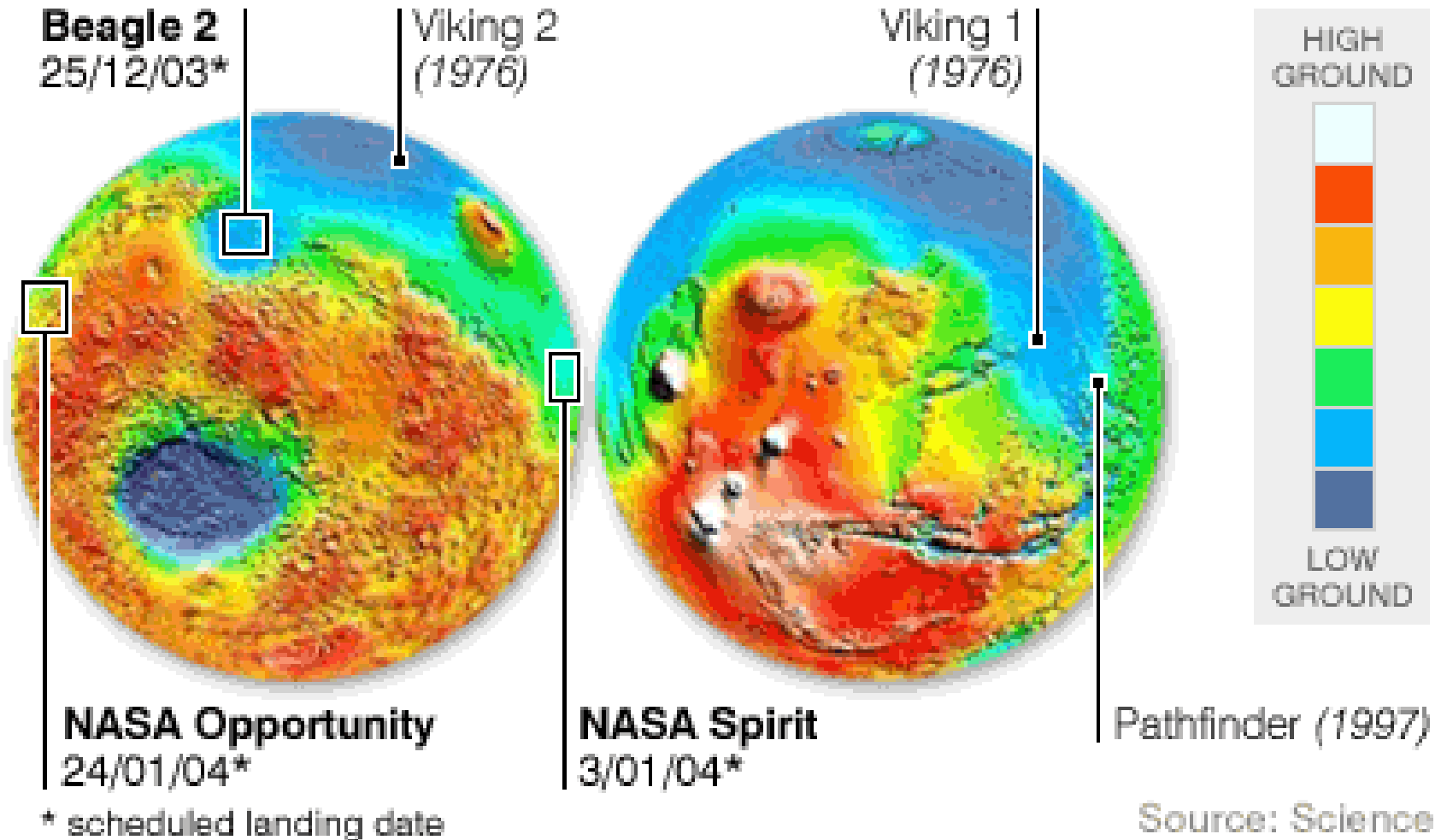
- Humberto Maturana(1980)
 - "Autopoiesis" is the process by which an organism can continuously reorganize its own structure
 - Adaptation consists in regenerating the organism's structure so that its relationship to the environment remains constant
 - Living systems are units of interaction
 - They cannot be understood independently of their environment
 - The relationship with the environment molds the configuration of a cognitive system

What the Modern Age knew

- **Alvin Toffler (1980)**
 - **The information age is the third social revolution after the agrarian and industrial revolution**

What the Modern Age knew

MARS LANDINGS (1976-2004)



What the Modern Age knew

- **Exploration of Jupiter**



What the Modern Age knew

- **Voyager 2**
 - **Jupiter on July 9, 1979,**
 - **Saturn on August 26, 1981,**
 - **Uranus on January 24, 1986,**
 - **Neptune on August 24, 1989,**
 - **Leaves solar system in 2001**

What the Modern Age knew

- **1976:**
 - **Punk-rock**
 - **Hip-hop**
 - **Disco-music**

What the Modern Age knew

- **Richard Dawkins (1976)**
 - **Genes want to live forever**
 - **"Replicator" vs "vehicle"**
 - **A replicator is a repository of information that is preserved over time and spread over space**
 - **The body is a vehicle**
 - **The body is a machine for copying genes**
 - **What survives is not my body but my genes**

What the Modern Age knew

- **Richard Dawkins**
 - **The "extended phenotype" includes the world an organism interacts with**
 - **The organism alone does not have biological relevance**
 - **What makes sense is an open system made of the organism and its neighbors**
 - **The control of an organism is never complete inside and null outside: there is a continuum of degrees of control, which allows partiality of control inside (e.g., Parasites operate on the nervous system of their hosts) and an extension of control outside (as in the cobweb)**

What the Modern Age knew

- **Richard Dawkins**
 - **The very genome of a cell can be viewed as a representation of the environment in the cell**

What the Modern Age knew

- **Richard Dawkins**
 - **Meme: the cultural counterpart of the gene (ideas)**
 - **A meme is the unit of cultural evolution, just like a gene is the unit of biological evolution**
 - **Ideas exhibit variation (copying with mistakes) and selection (pruning mistakes)**
 - **When a meme enters a mind, it parasitically alters the mind's process so that a new goal of the mind is to propagate the meme to other minds**
 - **Just like genes use bodies as vehicles to spread, so memes use minds as vehicles to spread**

What the Modern Age knew

- **Richard Dawkins**
 - **The mind as a machine for copying memes, just like the body is a machine for copying genes**
 - **Memes have created the mind, not the other way around**
 - **Just like it is genes that drive evolution, it is memes that drive thought**

What the Modern Age knew

– James Lovelock (1979)

- The rules of life work at both the organism level and at the ecosystem level, and eventually at the level of the entire planet
- Gaia

What the Modern Age knew

– Christopher Lasch (1979)

- **“Me generation”**
- **Mood of pessimism (Vietnam war, oil crisis)**
- **Shift from the political sphere to the personal sphere (change inside rather than outside)**
- **Drive towards self-awareness**
- **But driven by fads**

What the Modern Age knew

- **George Lakoff (1980):**
 - **Language is grounded in our bodily experience**
 - **Language is embodied, which means that its structure reflects our bodily experience**
 - **Our bodily experience creates concepts that are then abstracted into syntactic categories.**
 - **Syntax is a direct consequence of our bodily experience, not an innate property**
 - **Grammar is shared (to some degree) by all humans for the simple reason that we all share roughly the same bodily experience**

What the Modern Age knew

- **George Lakoff (1980):**
 - **All metaphors are ultimately based on our bodily experience**
 - **Metaphor = the process of experiencing something in terms of something else**
 - **The human conceptual system is metaphorical in nature, as most concepts are understood in terms of other concepts**
 - **Language comprehension always consists in comprehending something in terms of another**
 - **All our concepts are of metaphorical nature and are based on our physical experience**

What the Modern Age knew

- **George Lakoff (1980):**
 - **We understand the world through metaphors, and we do so without any effort, automatically and unconsciously**

What the Modern Age knew

- **George Lakoff (1980):**
 - **Language was created to deal with physical objects, and later extended to non-physical objects by means of metaphors**
 - **Conceptual metaphors transport properties from structures of the physical world to non-physical structures**
 - **Metaphor is central to our understanding of the world and the self**
 - **Metaphor is pervasive is that it is biological: our brains are built for metaphorical thought**
 - **Metaphorical language is but one aspect of our metaphorical brain**

What the Modern Age knew

Ferrari Testarossa
Lamborghini Countach



What the Modern Age knew

- **AIDS**
 - **1980: AIDS has already spread to all continents**
 - **1981: first cases of AIDS are discovered in the USA**
 - **1984: HIV is identified as the cause of AIDS**
 - **1999: peak of the AIDS epidemics in the West (33 million cases of AIDS of which 22 in Africa, 8 in Asia, 2.5 in the Americas, 0.5 in Europe)**
 - **2000: 21 million people have died worldwide of the AIDS epidemics**
 - **2001: 3 million people die worldwide of the AIDS epidemics and 40 million are infected (70% in Africa)**

What the Modern Age knew

- AIDS



What the Modern Age knew

- **Stanley Cavell (1981)**
 - **Ordinary language philosophy is the antidote to skepticism**

What the Modern Age knew

- Jean Baudrillard (1981)
 - Premodern society is symbolic society: structured around symbolic exchange (rituals, gifts, festivals)
 - Modern society is "productivist" society: structured around production
 - Capitalist society is organized around production
 - Marxism itself is merely a more efficient organization of production
 - The postmodern cultural revolution aims at bringing back the symbolic society
 - E.g. issues outside the sphere of the economics of production: blacks, women, gays

What the Modern Age knew

- Jean Baudrillard (1981)
 - Transformation from a "metallurgic" society to a "semiurgic" society
 - The modern society "exploded" in all directions (science, technology, empires, capital), a constant proliferation of goods and services
 - Postmodern society is imploding in all directions
 - The implosion of boundaries (eg politics becomes entertainment)

What the Modern Age knew

- Jean Baudrillard (1981)
 - McLuhan-esque implosion: the boundary between the real and the simulation becomes blurred
 - Reality vanishes in a fog of signs
 - Technology, economics and the media create a world of simulacra
 - The simulation can even become more real than the real (hyper-real)
 - Post-modern society is replacing reality with a simulated reality of symbols and signs

What the Modern Age knew

- Jean Baudrillard (1981)
 - At the same time meaning has been lost in a neutral sterile flow of information, entertainment and marketing
 - An accelerating proliferation of signs that destroys meaning
 - A global process of destruction of meaning
 - The postmodern world is meaningless, it is a reservoir of nihilism

What the Modern Age knew

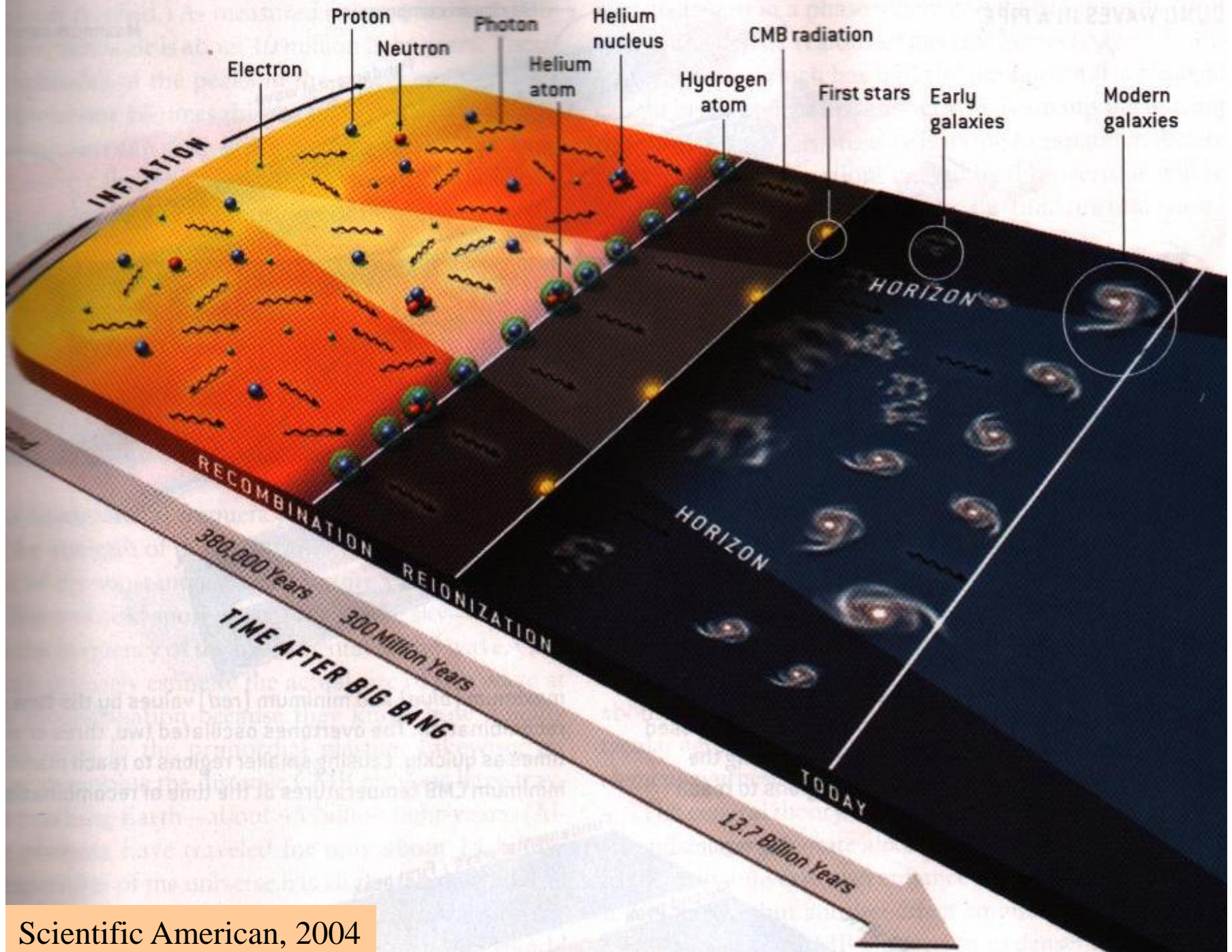
- Jean Baudrillard (1981)
 - All possible art, all possible theory and history itself (and even sexuality) have been exhausted
 - Post-historical age, "a post-orgy state of things"
 - Art, theory and history can only recombine and play with all forms
 - Ubiquitous transvestism

What the Modern Age knew

- Jean Baudrillard (1981)
 - Objects rule subjects
 - "Things have found a way to elude the dialectic of meaning, a dialectic which bored them:
 - they did this by infinite proliferation"
 - The only metaphysics that makes sense is a metaphysics of the absurd like Jarry's pataphysics in which objects rule
 - After your death "the very fact of your absence makes the world distinctly less worthy of being lived in"

What the Modern Age knew

- **Big Bang model (1981)**
 - Quantum fluctuations in an infinitely small universe "created" the universe (space, time and matter) in a "big bang" (George Gamow)
 - Time slowly turned into spacetime giving rise to spatial dimensions
 - Spacetime started expanding (Alan Guth's "inflationary" model)



What the Modern Age knew

- **Carol Gilligan (1982)**
 - **Ethics from the female perspective**
 - **Male ethics emphasizes reciprocity, separation, justice.**
 - **Female ethics emphasizes consensus, connection and empathy.**
 - **Three stages of the ethics of care:**
 - **Individual survival**
 - **Self sacrifice is goodness**
 - **Do not hurt others or self**

What the Modern Age knew

- **Alasdair MacIntyre (1982)**
 - **Virtue is social practices that confer a personal identity on individuals, consistent with the goal of improving ordinary life**

What the Modern Age knew

- **Clifford Geertz (1983)**
 - **Psychology depends on sociology and it is therefore local**
 - **Human nature changes from culture to culture**

What the Modern Age knew

- **Fredric Jameson (1984)**
 - **Postmodernism as the spatialization of culture under the pressure of organized capitalism**
 - **Colonization of culture by capitalism**
 - **History is the ultimate horizon of any cultural analysis**

What the Modern Age knew

- Donald Davidson (1984)
 - “Anomalous monism”: the mental and the neural are not the same thing, even if there is only one substance, a physical substance; the mental cannot be fully reduced to the physical, because the mental is holistic; if we knew everything about the universe and the brain, we still could not predict a mental event
 - “Token Identity theory”: any mental state is identical to a physical state, but the physical state corresponding to a given mental state is not necessarily always the same one (two people can have the same feeling and the same person can have the same feeling twice without having every single neuron in the same state both times)

What the Modern Age knew

- Donald Davidson (1984)
 - Every mental event is a physical event, but it is not possible to reduce mental properties to physical properties (there exist no "psychophysical" laws)
 - The language of Psychology cannot be reduced to the language of Physics
 - The mental is ultimately physical, but there is no way to explain a mental event in terms of physical events

What the Modern Age knew

- Donald Davidson (1984)
 - “Truth-conditional semantics”: Tarski defined truth based on meaning, Davidson defines meaning based on truth.
 - The meaning of a sentence is defined as what it would be if the sentence were true
 - The task for a theory of meaning is to generate all meta-sentences (or "T-sentences") for all sentences in the language through a recursive procedure
 - To know the meaning of a sentence is to know the conditions under which the sentence would be true

What the Modern Age knew

- **Michael Gazzaniga (1985)**
 - **Several independent brain systems work in parallel**
 - **Evolutionary additions to the brain**
 - **Many minds coexist in a confederation**
 - **A module located in the left hemisphere interprets the actions of the other modules and provides explanations for our behavior**
 - **Beliefs do not precede behavior, they follow it. Behavior determines our beliefs**
 - **It is only by behaving that we conceptualize our selves**

What the Modern Age knew

- **Michael Gazzaniga (1985)**
 - There are many "i"'s and one "i" that makes sense of what all the other "i"'s are doing
 - The verbal self keeps track of what the person is doing

What the Modern Age knew

- **Robert Ornstein (1986)**
 - **Many minds each operating independently and specialized in one task**
 - **The brain is a confederation of more or less independent brains**
 - **Minds compete for control of the organism**
 - **I am many persons but at any point in time I am aware of only one of them**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **The human genome alone cannot specify the whole complex structure of the brain**
 - **Individual brains are wildly diverse**
 - **"Neural Darwinism": application of Jerne's "selectional" theory of the immune system to the brain**
 - **The brain develops categories by selectively strengthening or weakening connections between neural groups**
 - **Neural groups "compete" to respond to environmental stimuli**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **Each brain is different because its ultimate configuration depends on the stimuli that it encounters during its development**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - Adhesion molecules determine the initial structure of neural groups, the "primary repertory"
 - Experience determines the secondary repertory
 - Repertories are organized in "maps", each map having a specific neural function
 - A map is a set of neurons in the brain that has a number of links to a set of receptor cells or to other maps
 - Maps communicate through parallel bidirectional pathways, i.e. through "reentrant" signaling
 - Reentry is more than feedback: there can be many parallel pathways operating simultaneously
 - The process of reentrant signaling allows a perceptual categorization of the world

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **Categorization is a process of establishing a relation between neural maps**
 - **Categories (perceptual categories, such as "red" or "tall") do not exist physically, they are not located anywhere in the brain: they are a (on-going) process.**
 - **A further level of organization leads to (pre-linguistic) conceptualization**
 - **Conceptualization consists in constructing maps of the brain's own activity, or maps of maps**
 - **A concept is not a thing, it is a process**
 - **The meaning of something is an on-going, ever-**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **Brain processes are dynamic and stochastic**
 - **The brain is not an "instructional" system but a "selectional" system**
 - **The brain is not a direct product of the information contained in the genome, it uses much more information that is available in the genome, i.e. information derived from experience, i.e. from the environment**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **Primary consciousness (being aware of the world)**
 - **Two kinds of nervous system...**
 - **1. Memory continuously reorganizes ("recategorizes")**
 - **2. Learning as ranking of stimuli ("value-laden" memory, instinctive behavior)**
 - **Intelligent behavior + "instinctive" behavior**
 - **Primary consciousness arises from "reentrant loops" that interconnect "perceptual categorization" and "value-laden" memory ("instincts")**

What the Modern Age knew

- **Gerald Edelman (1987)**
 - **Higher-order consciousness (language and self-awareness)**
 - **Distinction between the self and the rest of the world**
 - **Social interaction... anatomical changes
...phonology... ...permanent
categories...Semantics...Syntax**
 - **Unique to humans**

What the Modern Age knew

- **Paul Romer (1990)**
 - **Technological progress drives economic growth (Robert Solow, 1956)**
 - **What drives technological progress**
 - **Ideas are goods**
 - **Ideas are costly to produce but cheap to reproduce**
 - **The manufacturing of ideas enjoys increasing returns to scale**
 - **Idea factories can cover the costs to produce ideas only if they are allowed a monopoly (patent, copyright) over the ideas they manufacture**

What the Modern Age knew

- **Allan Hobson (1989)**
 - **Dreams are a window on some processing that goes on in the brain while we sleep**
 - **The brain is rapidly processing a huge amount of information in whatever order**
 - **Our consciousness sees flashes of the bits that are being processed**
 - **These bits seem to compose stories of their own, and the stories look weird**
 - **Remembering and forgetting occur during dreams**
 - **Rem sleep is important for consolidating long-term memories**

What the Modern Age knew

- **Francis Fukuyama (1989)**
 - **The end of history: the end of the ideological debate**
 - **Liberal democracy triumphed**
 - **Industrialism is inescapable**
 - **Capitalist industrialism is the most efficient kind of industrialism**

What the Modern Age knew

- **Collapse of communism**
 - **Gorbachev's Glasnost (political openness) and perestroika (economic restructuring)**
 - **Solidarnosc**
 - **Berlin Wall**
 - **Tiananmen Square**



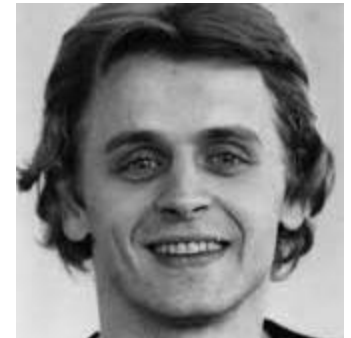
(Associated Press)

What the Modern Age knew

- Music 1969-99
 - Dmitrij Shostakovic: Symphony 15 (1971)
 - Morton Feldman: Rothko Chapel (1971)
 - Gyorgy Ligeti: Double Concerto (1972)
 - Henryk Gorecki: Symphony 3 (1976)
 - Arvo Part: De Profundis (1980)
 - Witold Lutoslaski: Symphony 3 (1983)

What the Modern Age knew

- Ballet
 - Trisha Brown: "Man Walking Down the Side of a Building" (1970)
 - Steve Paxton: "Magnesium" (1972) - birth of "contact improvisation"
 - Mikhail Baryshnikov defects to the USA (1974)



What the Modern Age knew

- Ballet
 - Kazuo Ohno's butoh dance "La Argentina Sho" (1977)
 - Simone Forti (1935, USA): holographic dance piece "Striding/Crawling" (1977)



What the Modern Age knew

- Ballet
 - Pina Bausch (Germany): "Orpheus and Eurydice" (1978)
 - Samuel Beckett (France): "Quad I + II" (1982)
 - Twyla Tharp (USA): "In The Upper Room" (1986)
 - Mark Morris (1956, USA): "L'Allegro, Il Penseroso ed il Moderato" (1988)
 - Dumb Type (Japan): "pH" (1990)

What the Modern Age knew

- Multimedia Theater
 - Ping Chong (1946, Canada): “Nosferatu” (1985)
 - George Coates (1952, USA): “Actual Sho” (1987)
 - Reza Abdoh (1963, USA): “Father was a Peculiar Man” (1990), a multimedia performance stretching across four blocks of New York City's Meatpacking District

What the Modern Age knew

- Fiction 1969-99
 - Vladimir Nabokov (1899, Poland): "Ada" (1969)
 - Juan Goytisolo (1931, Spain): "Don Julian" (1970)
 - Ismail Kadare (1934, Albania): "Chronicle in Stone" (1971)
 - Danilo Kis (1935, Serbia): "Hourglass" (1972)
 - Pynchon (1937, USA): "Gravity's Rainbow" (1973)
 - Manuel Puig (1932, Argentina): "El Beso de la Mujer Arana" (1976)
 - Mario Vargas Llosa (1936, Peru): "La Tia Julia" (1978)
 - Salman Rushdie (1947, India): "Midnight's Children" (1980)
 - Toni Morrison (1942, USA): "Tar Baby" (1981)
 - Milan Kundera (1929, Czech): "The Unbearable Lightness of Being" (1985)
 - Jose Saramago (1922, Portugal): "Ricardo Reis" (1984)

What the Modern Age knew

- **Jazz 1969-99**
 - **Ornette Coleman: Free Jazz (1960)**
 - **Charles Mingus: The Black Saint And The Sinner Lady (1963)**
 - **John Coltrane: A Love Supreme (1964)**
 - **Don Cherry: Symphony For Improvisers (1966)**
 - **Sun Ra: Atlantis (1967)**
 - **Anthony Braxton: For Alto (1968)**
 - **Miles Davis: Bitches Brew (1969)**
 - **Art Ensemble of Chicago: Les Stances A Sophie (1970)**
 - **Carla Bley: Escalator Over The Hill (1971)**
 - **Anthony Braxton: Saxophone Improvisations (1972)**
 - **Sam Rivers: Streams (1973)**
 - **Randy Weston: Blues To Africa (1974)**
 - **Terje Rypdal: Odyssey (1975)**
 - **George Lewis: Solo Trombone Record (1976)**
 - **Leroy Jenkins: Solo Concert (1977)**
 - **Leo Smith: Mass on the World (1978)**

What the Modern Age knew

- **Jazz 1969-99**
 - **Dollar Brand: African Marketplace (1979)**
 - **Anthony Davis: Lady of the Mirrors (1980)**
 - **Joe McPhee: Topology (1981)**
 - **Henry Threadgill: When Was That (1982)**
 - **Borbetomagus: Barbet Wire Maggot (1983)**
 - **Ronald Shannon Jackson: Pulse (1984)**
 - **David Torn: Best Laid Plans (1985)**
 - **Henry Threadgill: You Know the Number (1986)**
 - **Hank Roberts: Black Pastels (1987)**
 - **Bobby Previte: Claude's Late Morning (1988)**
 - **Tim Berne: Fractured Fairy Tales (1989)**
 - **Charlie Haden: Dream Keeper (1990)**
 - **Don Byron: Tuskegee Experiments (1991)**
 - **Maria Schneider: Evanescence (1992)**
 - **Franz Koglmann: Cantos I-IV (1993)**
 - **Toshiko Akiyoshi: Desert Lady (1994)**

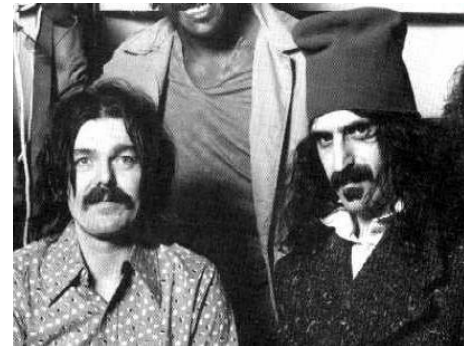
What the Modern Age knew

- **Popular music of the white western youth**
 - **1971: Cosmic music (Germany)**
 - **1974: Punk-rock (UK)**
 - **1976: Disco-music (Germany)**
 - **1976: Industrial music (UK)**
 - **1978: Ambient music (UK)**
 - **1987: Grindcore (UK) and Death-metal**
 - **1989: Post-rock**
 - **1990: Doom-metal (UK)**
 - **1990: Drum'n'bass (UK)**
 - **1994: Glitch music (Germany)**

What the Modern Age knew

- **Rock Music 1969-99**

- 1966 Bob Dylan: **Blonde On Blonde**
- 1967 Velvet Underground & Nico
- 1968 Van Morrison: **Astral Weeks**
- 1969 Captain Beefheart: **Trout Mask Replica**
- 1970 Nico: **Desert Shore**
- 1971 Faust: **Faust**
- 1972 Klaus Schulze: **Irrlicht**
- 1973 Popol Vuh: **Hosianna Mantra**
- 1974 Robert Wyatt: **Rock Bottom**
- 1975 Neil Young: **Tonight's The Night**
- 1976 Patti Smith: **Radio Ethiopia**
- 1977 Suicide: **self-titled**
- 1978 Pere Ubu: **Modern Dance**
- 1979 Pop Group: **Y**



What the Modern Age knew

- **Rock Music 1969-99**

- **1980 Bruce Springsteen: River**
- **1981 Rip Rig Panic: God**
- **1982 Dream Syndicate: Days Of Wine And Roses**
- **1983 Cocteau Twins: Head Over Heels**
- **1984 Husker Du: Zen Arcade**
- **1985 Foetus: Nail**
- **1986 Big Black: Atomizer**
- **1987 Swans: Children Of god**
- **1988 Sonic Youth: Daydream Nation**
- **1989 Peter Gabriel: Passion**
- **1990 Royal Trux: Twin Infinitives**
- **1991 Slint: Spiderland**
- **1992 Morphine: Good**
- **1993 Vampire Rodents: Lullaby Land**
- **1994 Lisa Germano: Geek The Girl**

What the Modern Age knew

- **Poetry**

- **Joseph Brodsky (1940, Russia): "Stop in the Desert" (1970)**
- **Mario Luzi (1914): "Su Fondamenti Invisibili" (1971)**
- **Derek Walcott (Trinidad, 1930): "Another Life"" (1973)**
- **Edward-Kamau Brathwaite (Barbados, 1930): "The Arrivants" (1973)**
- **Giorgio Caproni (1912): "Il Muro della Terra" (1975)**
- **John Ashbery (USA, 1927): "Self-Portrait in a Convex Mirror: (1975)**
- **James Merrill (USA, 1926): "The Changing Light at Sandover (1982)**

What the Modern Age knew

- **Italo Calvino (1923): "Se una Notte d'Inverno un Viaggiatore" (1979)**
 - The author addresses the reader in second person (“you”) and reveals himself as being Calvino
 - The reader is continuously frustrated in her/his attempt to read the novel
 - The plot exists, but it is the reader’s search for the text to read
 - Nested narrative and meta-narrative levels
 - The Author plays with the Reader, that becomes the protagonist of the Novel
 - The Novel is about the Reader trying to read the novel. When the reader finishes the Novel, he has read the story of how he failed to read the Novel.

What the Modern Age knew

- **Fiction**

- **Michel Tournier (1924): "Le Roi des Aulnes" (1970)**
- **Uwe Johnson (1934): "Jahrestage" (1983)**
- **Winfried Georg Sebald (1944): "Die Ausgewanderten" (1992)**
- **Elfriede Jelinek (1946): "Die Ausgesperrten" (1980)**

What the Modern Age knew

Piero Scaruffi

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