

1347 | 2020

Plagues as Catalyzers of System Transitions

From the Black Death to the Coronavirus

[Sheltering Places – Thinking the COVID-19 Pandemic]

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New Centre for Research and Practice

Davor Löffler, Berlin

0. Current Situation – Four Scenarios

1. Black Death

2. New Beginnings

3. Stages in Civilizational History

4. Potentials for a Catalyzation of a Systems Transition

Current Situation – Four Scenarios

Four Scenarios of the Coronavirus Crisis

Many scenarios are possible due to the overabundance and variety of factors in a global world

Four formally distinguished crisis scenarios

1. Fast process / “homo faber”: Vaccine / medication, duration 6-18 months
2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years
3. Open process / “Perma-crisis”: Mutation of virus, increase of mortality rate, waves of pandemics, open duration
4. Infinite process / “Mad Max”: Perma-pandemic, no immunity or constant mutation, open duration

Four Scenarios of the Coronavirus Crisis

1. Fast process / “homo faber”: Vaccine / medication, duration 6-18 months

Consequences

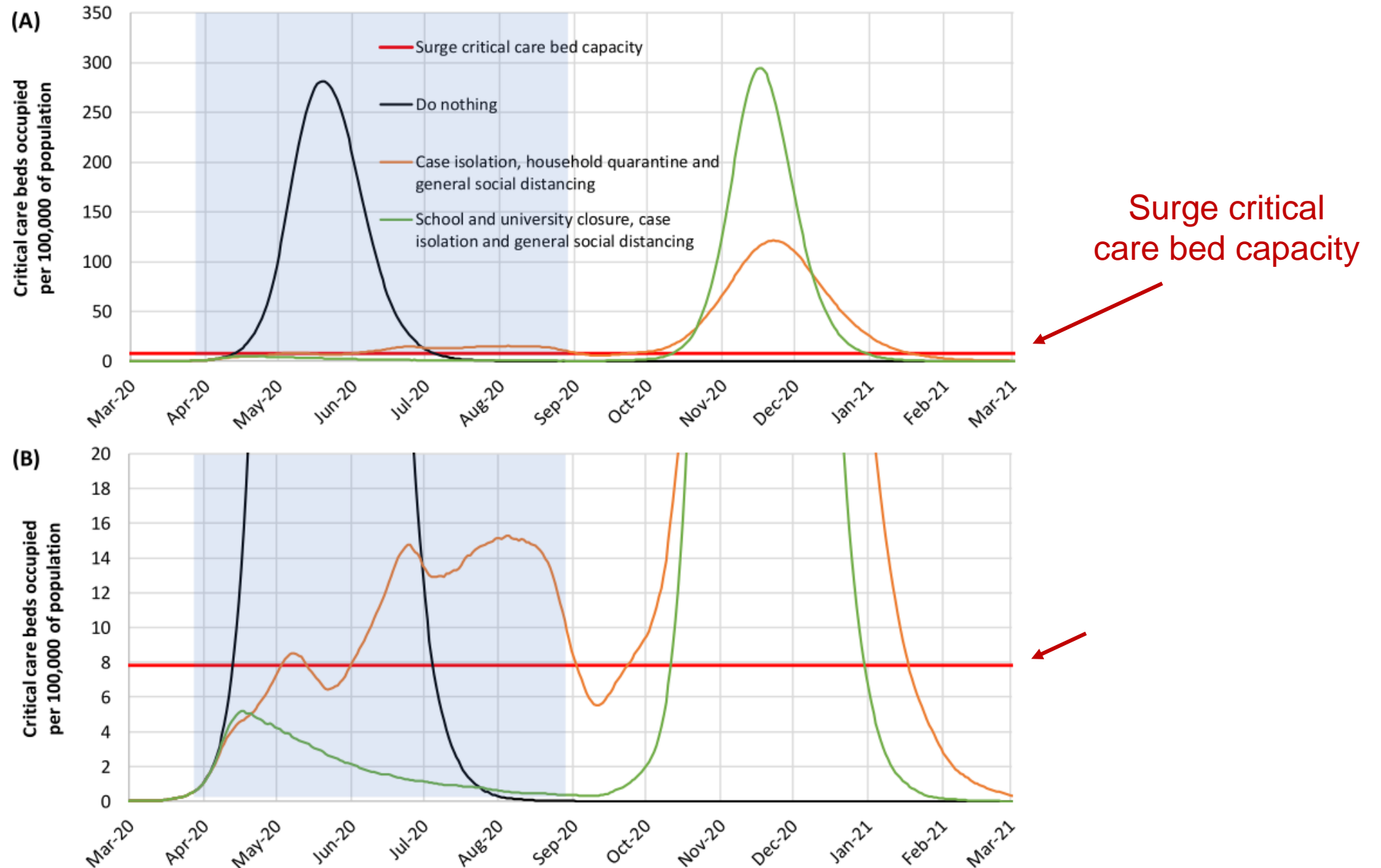
- Short-term financial crisis
 - Local, national adaptations
 - Establishment of global warning systems, emergency protocols etc.
 - Increase of big-data, algorithmic control and prediction technologies
 - Increase of permeation of surveillance in the sense of data retrieval
- May even be turned into a success of the current system

Four Scenarios of the Coronavirus Crisis

2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years

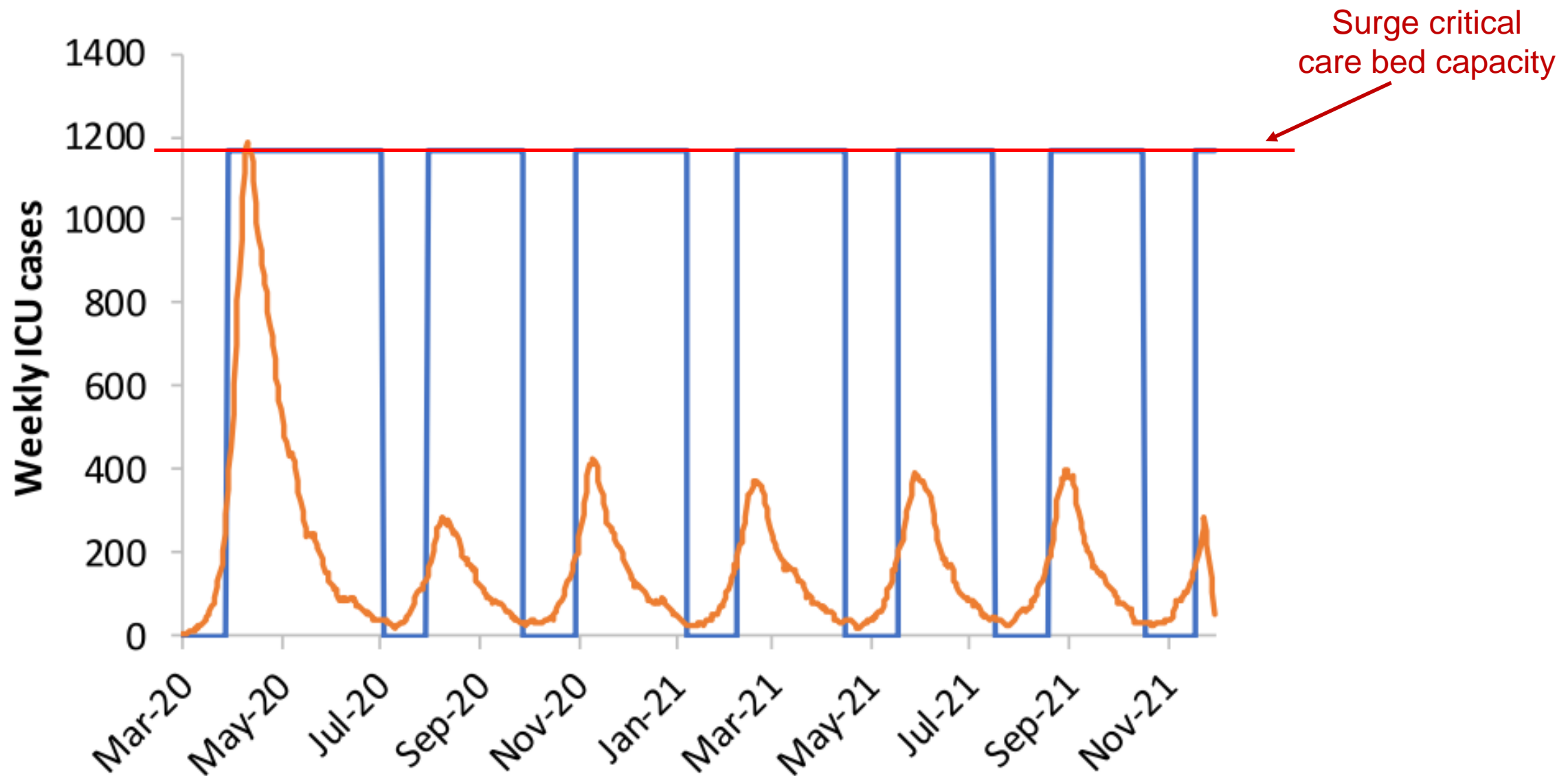
Four Scenarios of the Coronavirus Crisis

2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years



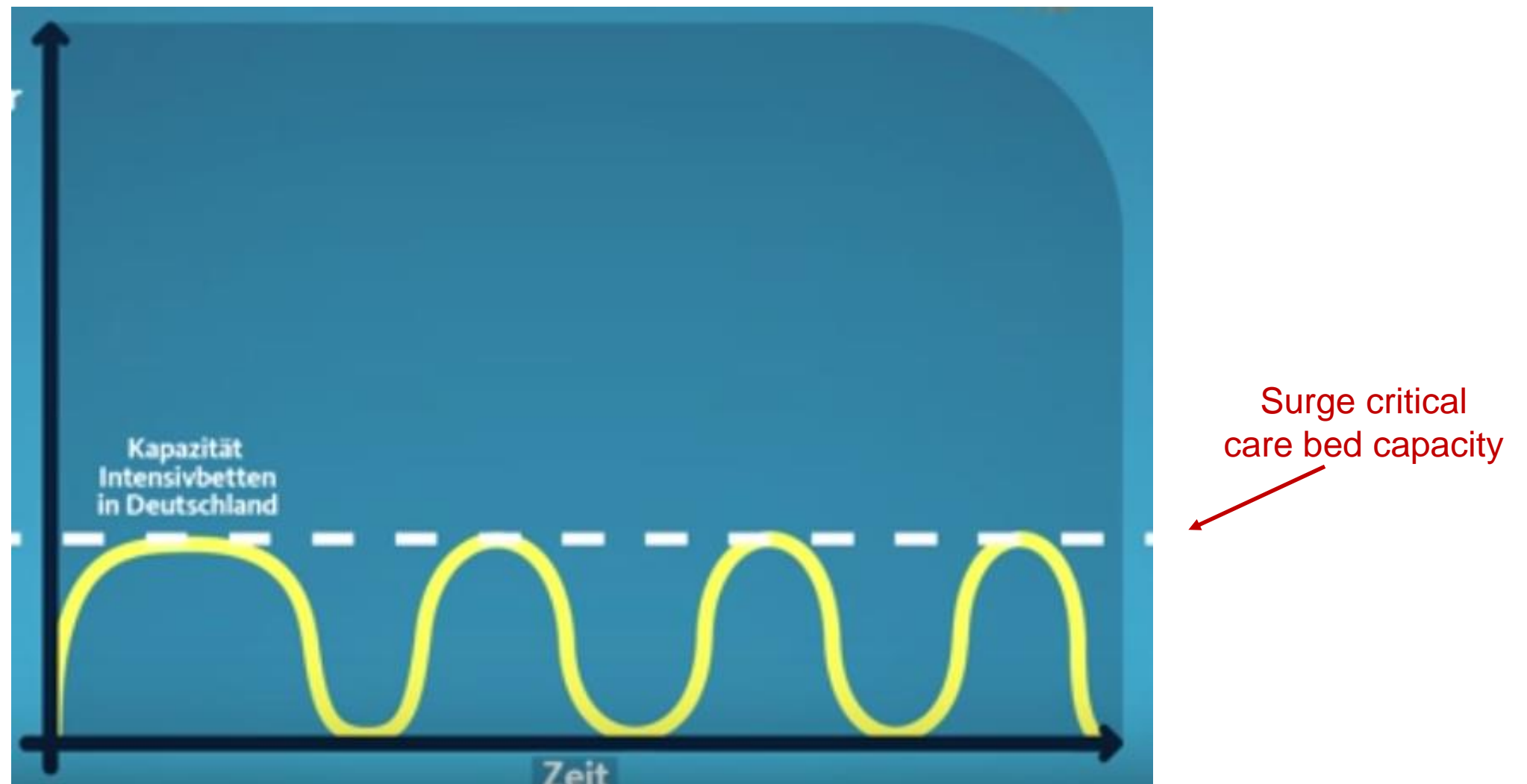
Four Scenarios of the Coronavirus Crisis

2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years



Four Scenarios of the Coronavirus Crisis

2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years



Four Scenarios of the Coronavirus Crisis

2. Long process / “Surfing the Curve”: Controlled build up of “Herd Immunity”, duration >5 years

- Developed states pay toll, but remain stable
- Developing states collapse

Huge impact, examples:

- Old rules and regulations may be replaced (but there are many factors and fields)
- Old elite died (age) + delegitimization and replacement by specialists (scientists + AI) in many sectors
- A whole generation will have a rupture in education = social reproduction interrupted (knowledge and values)
- Financial markets and central banks may brake down, new forms of economic media may be needed
- Global supply chains will be difficult to maintain (Africa, India, Middle East)

Four Scenarios of the Coronavirus Crisis

3. Open process / “Perma-crisis”: Mutation of virus, high mortality rate, waves of pandemics, open duration

- High number of deaths
 - Disruption of production, trade and mobility
 - Disruption of world system, entire decoupling of center and periphery
- Total reset
- But not much is left to build upon

Four Scenarios of the Coronavirus Crisis

4. Infinite process / “Mad Max”: Perma-pandemic, no immunity or constant mutation, open duration

- Collapse of institutions
- Permanent chaos
- Fragmentation and micro-localization of politics

Four Scenarios of the Coronavirus Crisis

Coronavirus as catalyzer of a transition?

~~“Perma-crisis”, “Mad Max”~~: nothing is left

→ Scenario 1,5 – 2,5: “homo faber” + “Surfing the Curve”

Long process: >5 years

- no total collapse
- but considerable impacts
- incentives for reconstitution
- institutionalization of current tendencies (automatization, UBI, AI instead of humans in control, etc.)

→ **Disruption of societal reproduction and break of path dependency is here and we need new models (Left Accelerationism + FFF, last chance before window is closing regarding climate change)**

→ **Priority: Put a wedge between the old and new – EVERYBODY from all factions will try do that!**

Black Death

Catalyzer of Transformation to Modernity

General History

Three plague pandemics

1. Plague pandemic:

541–542, Justinian Plague (<25 Mio)

2. Plague pandemic:

1347–1351, Europe (later termed “Black Death”)

→ Occurrence in waves, for example in England:

1375, 1390, 1399–1400, 1405–1406, 1411–1412, 1420,
1423, 1428–1429, 1433–1435, 1438–1439, 1463–1465,
1467, 1471, 1479–1480 ...

1665 London, 1720 Marseille, 1738 Eastern Europe

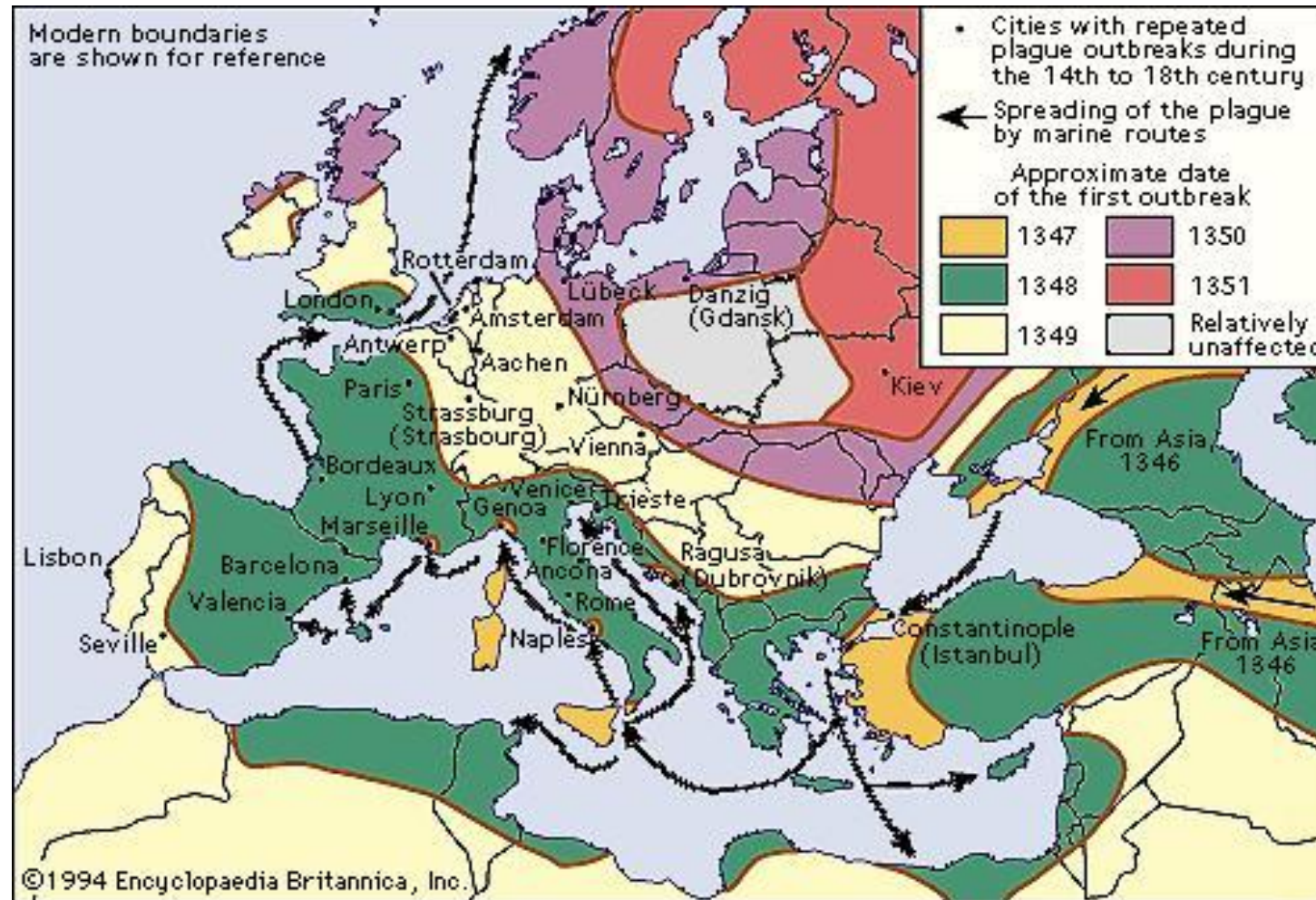
3. Plague pandemic:

1866–1900(–1960), Asia (+ India, USA, Hawaii, North Africa)

Today still occasionally some cases



Europe 1347-1351



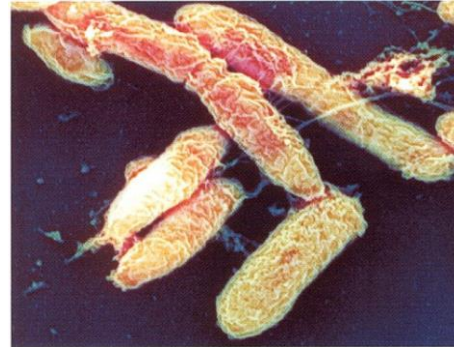
Origin probably in Mongolia, brought to Europe by ships from Caffa, Black Sea

30% of entire population died

20-80% depending on region

Cause

Bacterium: *Yersinia pestis* (discovered in 1894 by Alexandre Yersin and Shibasaburo Kitasato)



Cause of sickness

Bacterium enters body via vomit of fleas, reproduces and dead bacteria release poison

Types / stages:

Bubonic (lymphatic system): First stage

Septicemic (blood): <99% Mortality

Pneumonic (lungs): >99% Mortality



Symptoms

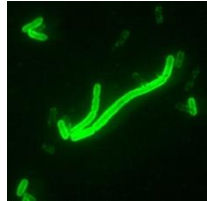
Lymphatic fluid affected, toxins, blood clotting, necrosis, organ failure, lung failure, toxic shock

Necrosis and bleeding skin → black dots

→ Today easily treatable with standard antibiotics

Infection Chains

Scientifically determined in 1897



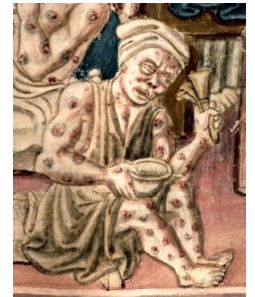
Yersinia pestis



Rattus rattus



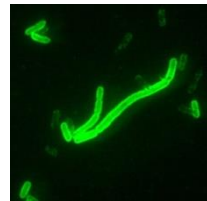
Xenopsylla cheopis



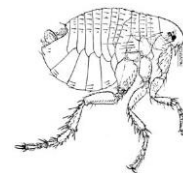
Homo sapiens



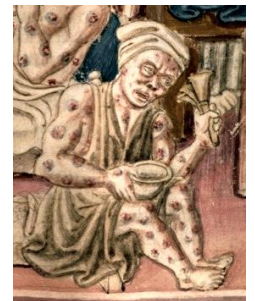
Homo sapiens



Yersinia pestis



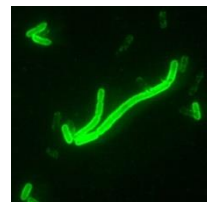
Pulex irritans



Homo sapiens



Homo sapiens



Yersinia pestis



Homo sapiens

Some “Trivia”

Only in 1498 church service and processions were prohibited in Venice, earlier people were encouraged to do so
It took 150 years to understand that it is a contagious disease that can affect a person even in church

In 1348 scholars of the University Paris were commissioned to find out the cause and came to the conclusion:

- Detrimental planetary constellation of Jupiter, Saturn and Mars on 2th March 1345
- Immorality
- Foul winds from the east (Miasma)

According to some theories the outbreak of the plague in 1334 took place in the Chinese province **Hubei**, killing 80% of population.

More likely it emerged in the Mongolian steppe, where rodents carry the bacterium.

New Beginnings

Feudal, Commercial, Agrarian Revolution 900-1300

Feudal Revolution

- Europe turns into a mosaic of feudal units
 - “Society of Corporations” (Breuer)
- = miniature units formed by written constitutions:
communitas regni, cities, villages, guilds, churches, monasteries, universities, trade/law associations,...



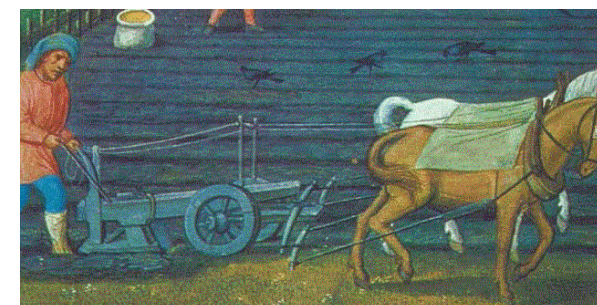
Commercial Revolution

- Reintroduction of money after decline of Rome
- Trade, merchant class, cities rising



Agrarian Revolution

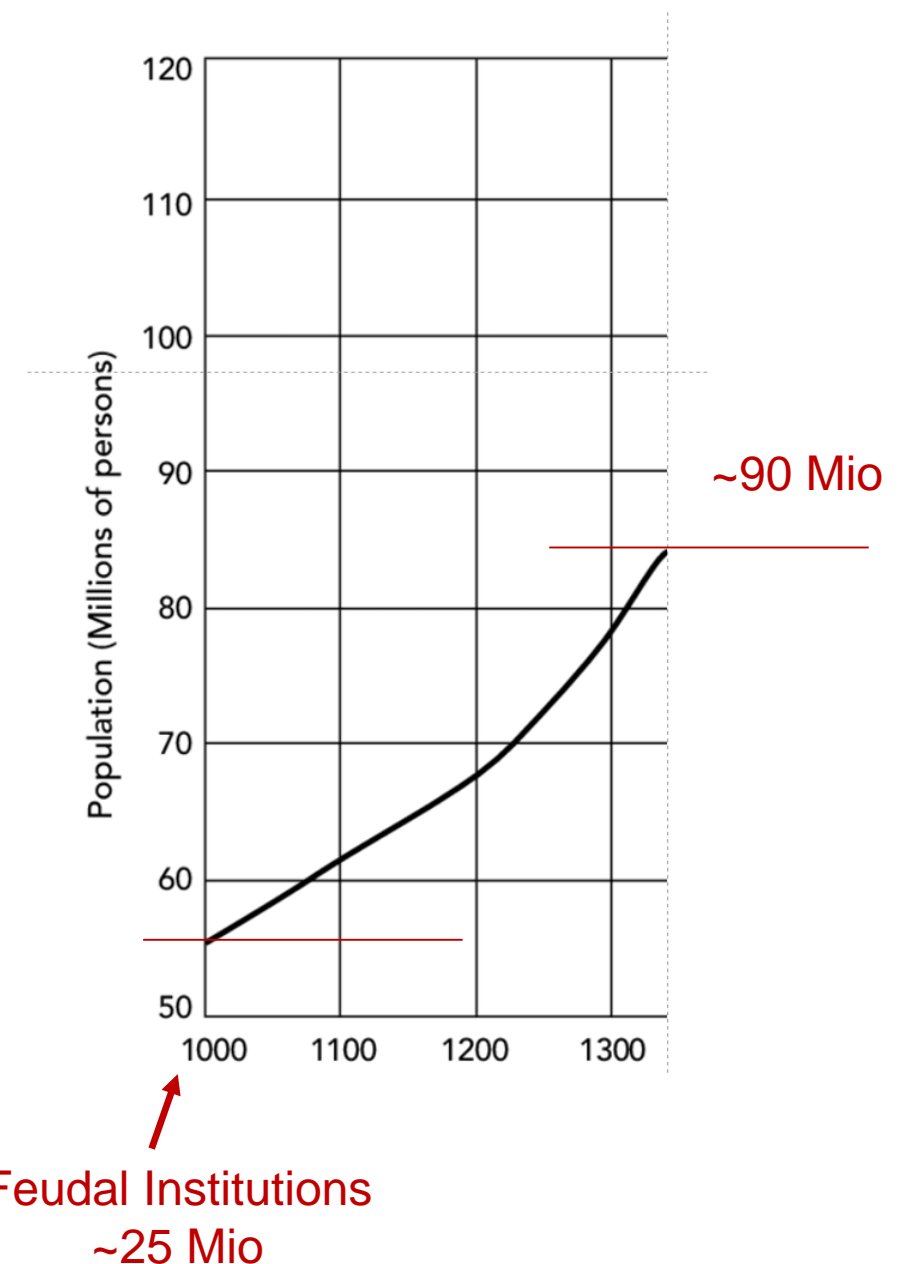
- three-field-system (productivity increase)
- yoke + iron plough, mills, compound machine



→ Explosion in productivity and population

14th Century – The “Century of Turmoil”

- Conflicts between all kinds of political units
- Church falling apart, for a while there were three popes
- Reformatory movements like flagellants and peasants movements
- Unbalanced distribution of goods
- Cities become powerful autonomous units
- Merchants gain power (North Italian city states and Hanse cities)
- New economic technologies: Bill of exchange, insurance, accounts...



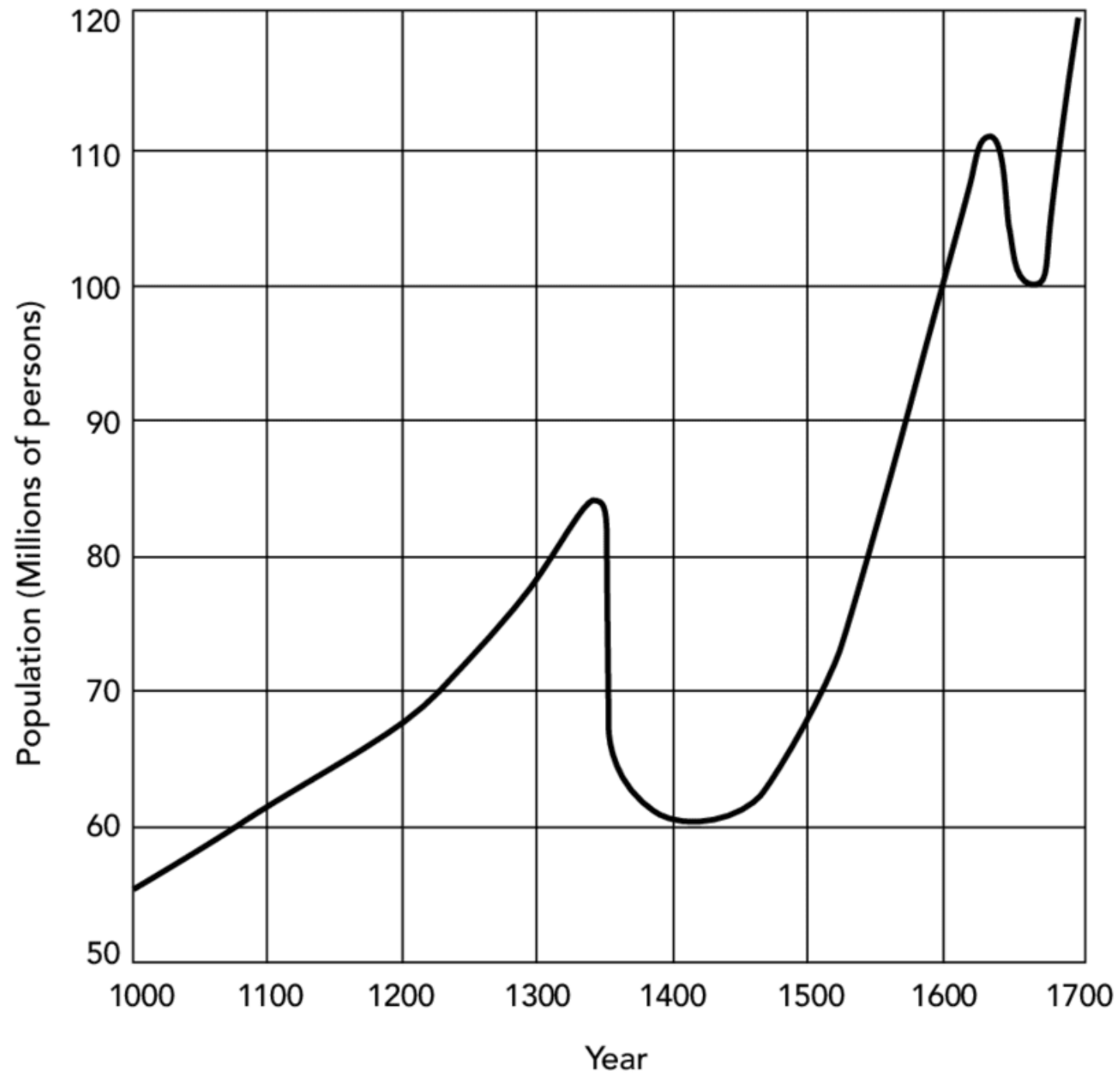
→ Developed around 1000 in a population of 25 Mio → 1340 around three times as many people, 90 Mio

→ The feudal institutions already could not reduce the complexities any longer

→ There were no means to integrate the effects of population and productivity growth institutionally

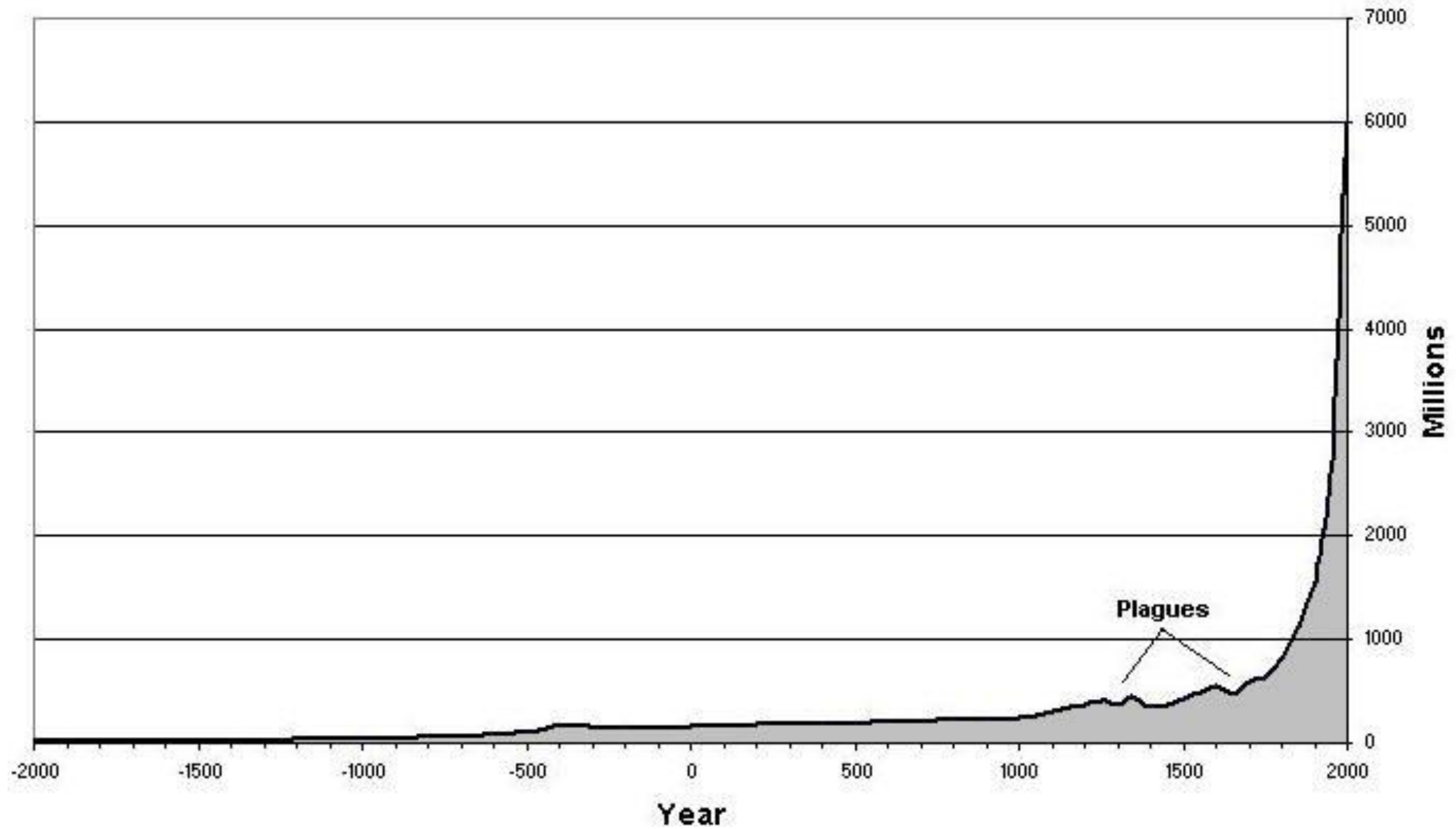
Impact of the Plague

European Population



Impact of the Plague

World Population



Immediate Effects of the Plague

- Depopulation
- Decrease of productivity

- Starvation
- Inflation

- Scapegoats and genocides: Jews (due to hygiene rules and ghettos less affected)

- Distrust in authorities
- Everybody equally mortal
- Church could not improve the situation

Consequences of the Plague

Leveling effect:

- Land to labor ratio changed: value of land reduced, labor increased
- Land owner vs. worker: equality

Overabundance of food:

- More food available (for example in Egypt from 1100 calories to 1900 calories per day)
- Untended land for pasture, from grain farming to animal husbandry = more meat

End of Serfdom:

- Workers became self-confident and started bargaining wages
- Wages increased
- Social mobility: Workers could become rich (but were not allowed to wear same clothes as upper class)
- Lower rents

Labor Laws:

- Fixing prices for labor market
- 1348 “Ordinance of Laborers”, 1351 “Statute of Laborers”

New, adaptive flexibility of distribution:

- Inheritance laws: All sons and daughters could inherit land
- Centralized and de-localized taxation for redistribution over whole country

The Plague as Catalyzer of the Transition to Modernity

→ **“Management Revolution” (“Verwaltungsrevolution,” Strothmann)**

- Labor laws, labor market
- Bureaucracy extends significantly
- Bourgeois structures expand, new power
- Regulation of migration and trade routes
- Delegitimization of previous elite and traditional power
- From accusation of lack of morality follows a questioning of the political structures
- Individual action of elites and of everyone enters into discourse
- Elite must prove itself by smart leadership and not by tradition

- New information regime, public communication, predecessor of participation
- Centralized legislative
- Long-term planning

The Plague as Catalyzer of the Transition to Modernity

In general emergence or increase of

- Public sphere
- Political participation
- Bureaucracy
- Early form of Technocracy / biopolitics
- Rationality in political decision making
- Individualism
- Social mobility
- Labor market
- Objectification (materialization) of body / medicine

- Discipline
- Gouvernmentality

The Plague as Catalyzer of the Transition to Modernity

Mental, psychological, conceptual, worldview, cosmology

Objectification of the other:

- The other becomes an infectious material entity, no longer for example mother, father, child, brother or sister(*)
- Depersonalization of power and social relationships
- Abstract institutions with abstract enforcers (predecessor of “Polizey”)
- Collective, local self-organization partially bridging traditional roles

*** Agnolo di Tura, ~1348:**

“The mortality in Siena began in May. It was a cruel and horrible thing; and I do not know where to begin to tell of the cruelty and the pitiless ways. It seemed that almost everyone became stupefied by seeing the pain. And it is impossible for the human tongue to recount the awful truth. Indeed, one who did not see such horribleness can be called blessed. And the victims died almost immediately. They would swell beneath the armpits and in their groins, and fall over while talking. Father abandoned child, wife husband, one brother another; for this illness seemed to strike through breadth and sight. And so they died. And none could be found to bury the dead for money or friendship. Members of a household brought their dead to a ditch as best they could, without priest, without divine offices. Nor did the death bell sound. And in many places in Siena great pits were dug and piled deep with the multitude of dead. And they died by the hundreds, both day and night, and all were thrown in those ditches and covered with earth. And as soon as those ditches were filled, more were dug. And I, Agnolo di Tura . . . buried my five children with my own hands And so many died that all believed it was the end of the world.”

The Plague as Catalyzer of the Transition to Modernity

Mental, psychological, conceptual, worldview, cosmology

Increase of abstraction:

- Dealing with invisible enemy, which can only be abstractly grasped from a distance and only indirectly evaded
- Biologization of the body (anatomical materialism vs. Christian cosmology)
- Laws and lawmakers follow abstract goals and measures
- Long-term planning
- Abstraction of command and taxation chains
- Hygiene: prevention and preemption

The Plague as Catalyzer of the Transition to Modernity

Arts

- Realism in Arts and Literature
- Architecture takes up Graeco-Roman style in south (towards beauty)

New virtues

- Foresight
- Rationality
- Selfcare as form of community care

The Plague as Catalyzer of the Transition to Modernity

→ Black Death accelerated already existing tendencies

→ Broke the feudal path dependency

→ Catalyzed the system transition

Accelerated or maybe even enabled the onset of Modernity

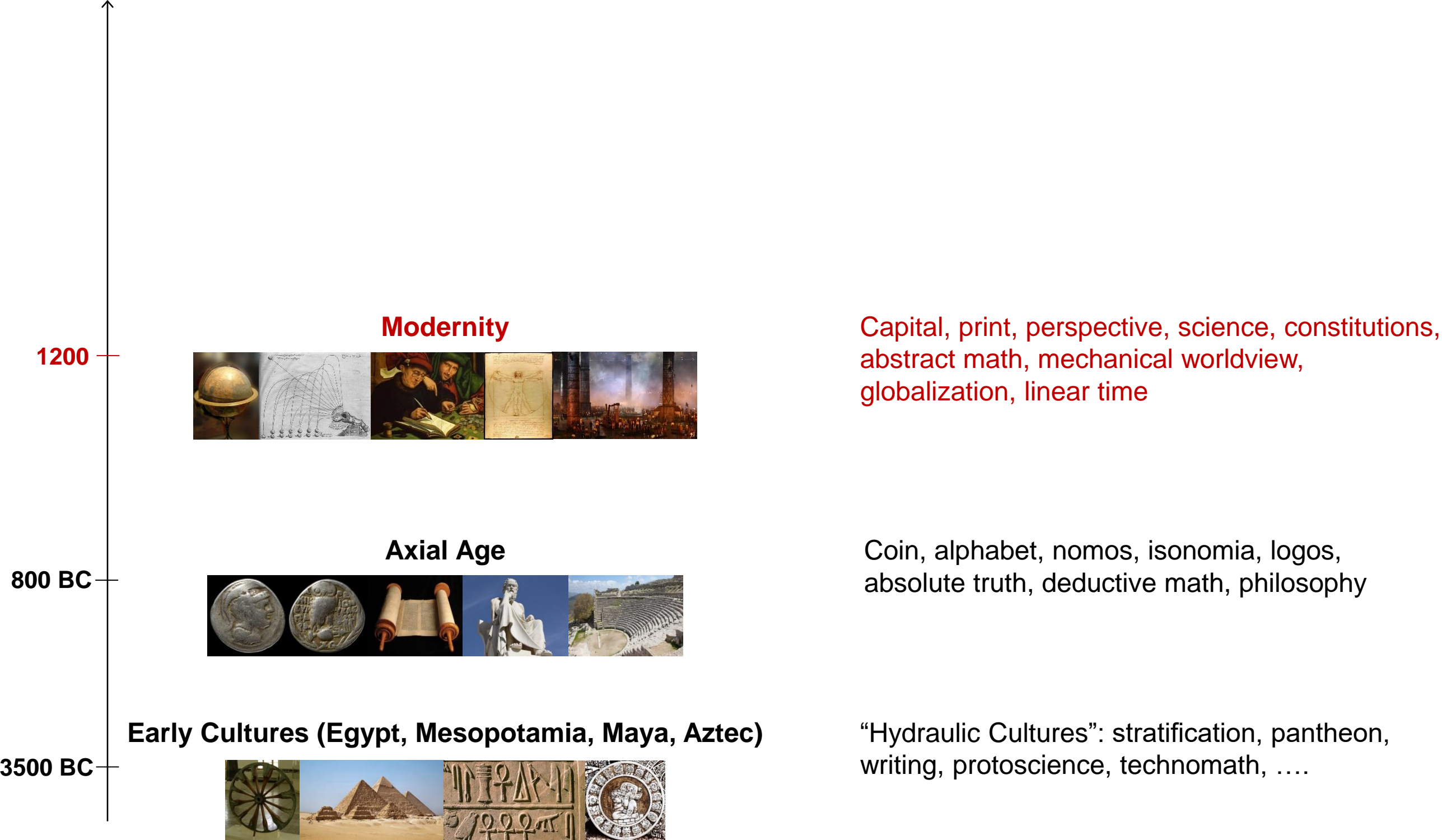
Stages in Civilizational History

From Modernity to the Technological Civilization

Stages in Civilizational History

Time

Civilizational Capacities

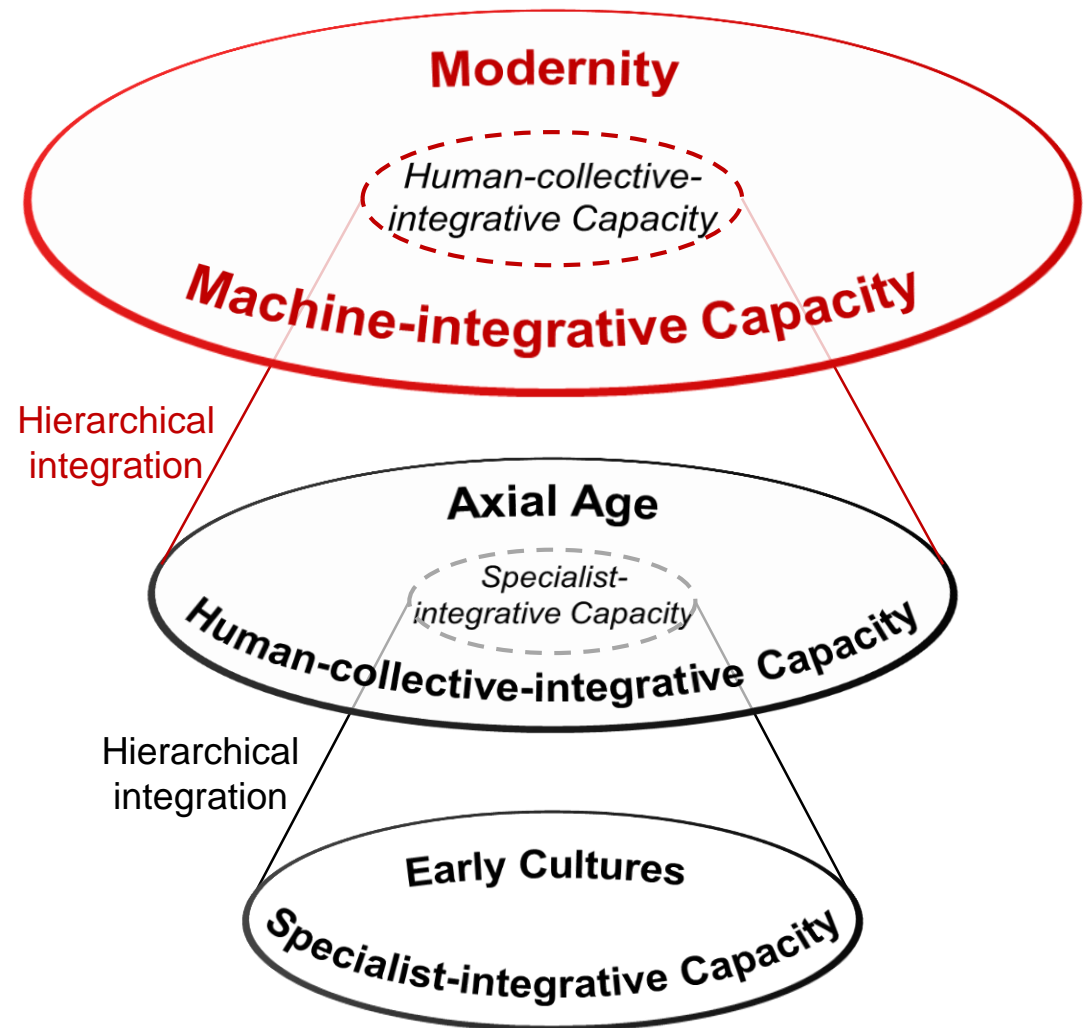
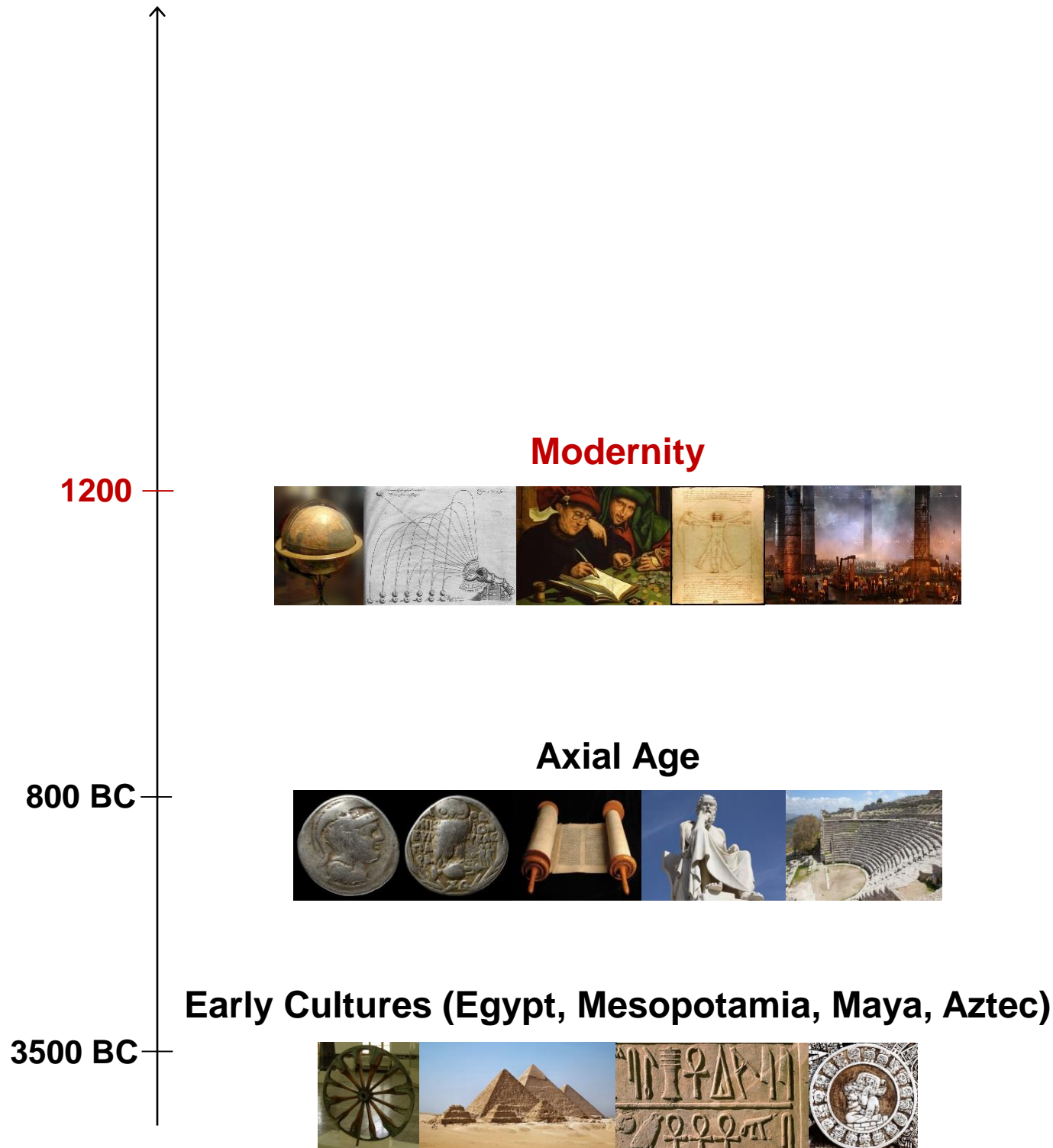


Stages in Civilizational History

Time

Civilizational Capacities

Layers of Integration / Recursion

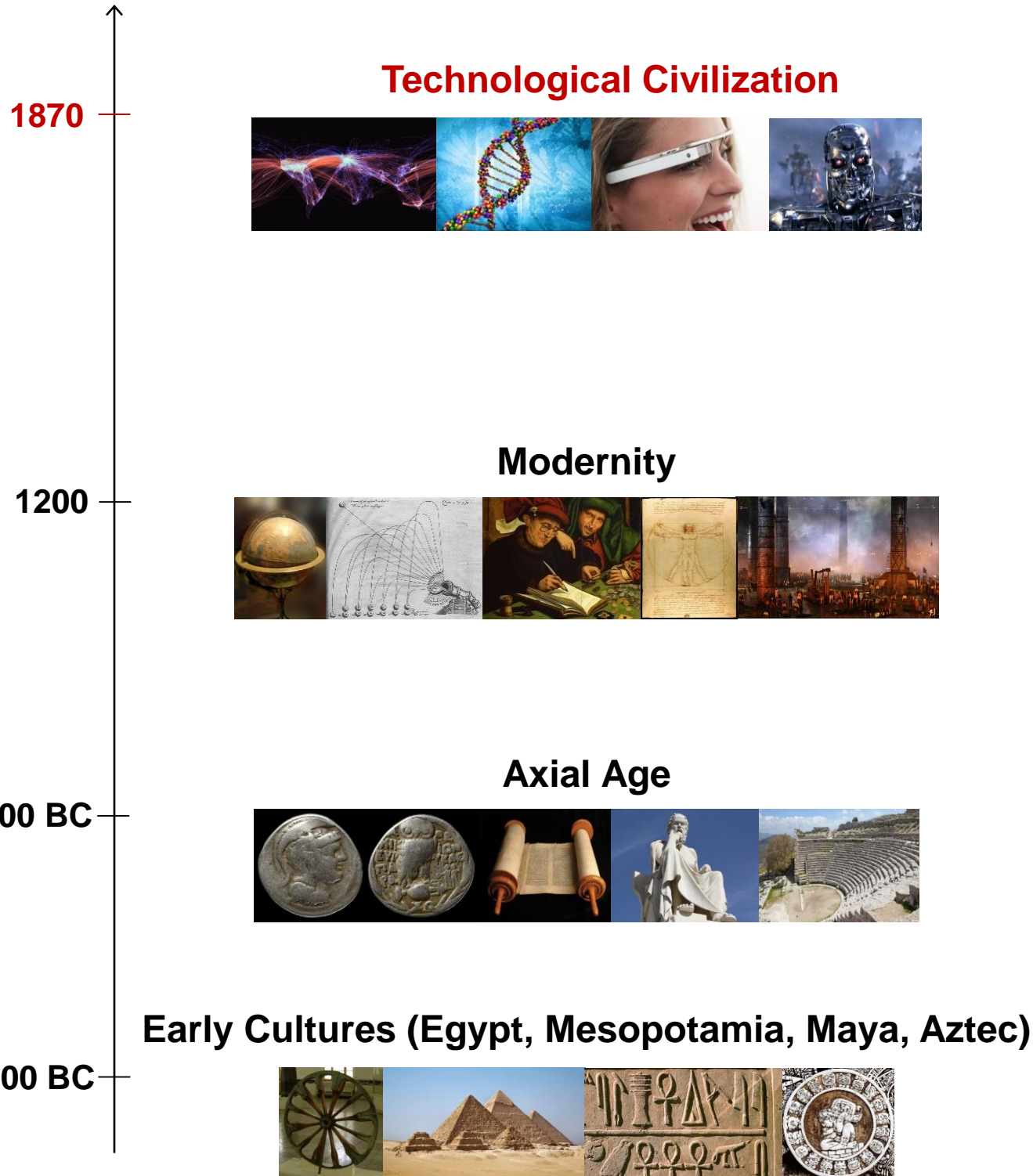


Stages in Civilizational History

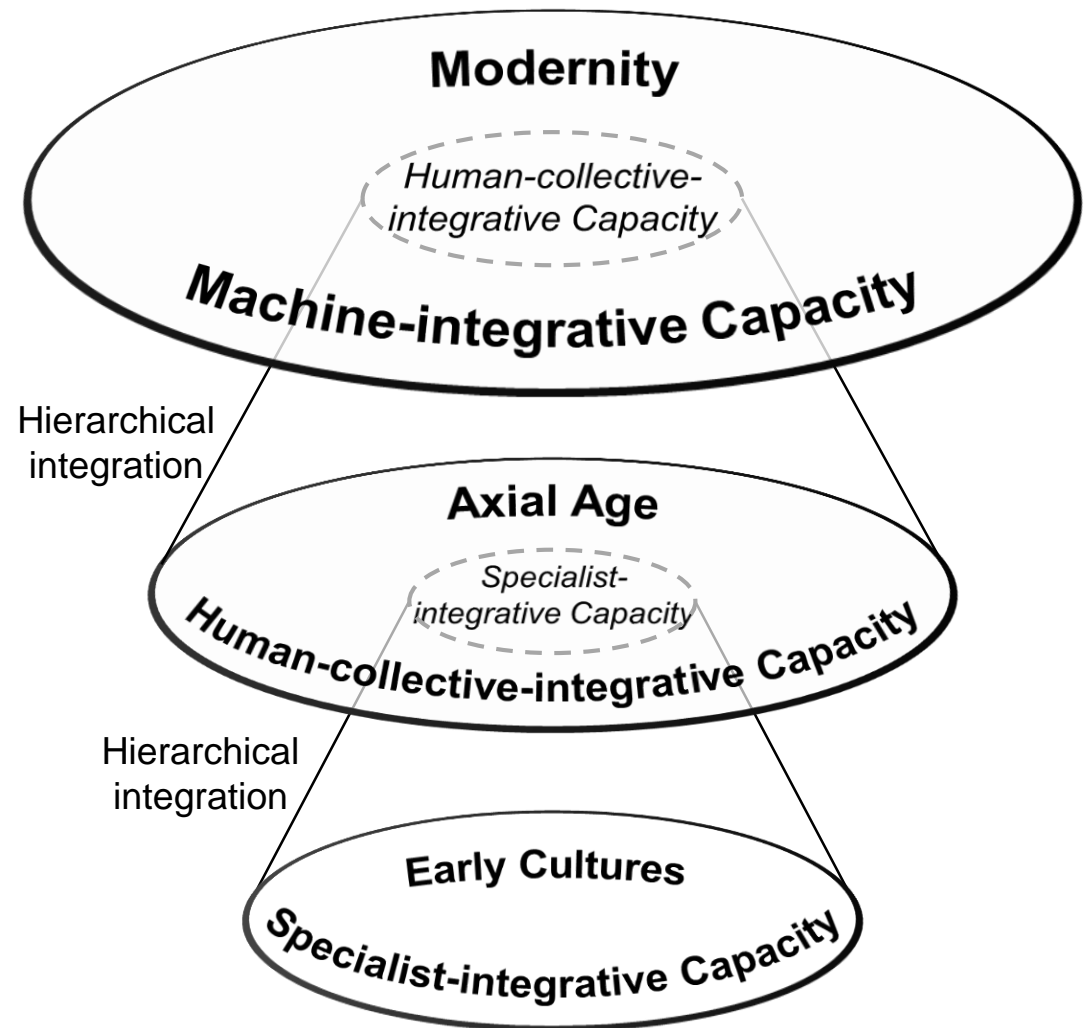
Time

Civilizational Capacities

Layers of Integration / Recursion



Atomosphere, electricity, chemistry, biology, information, media, systems, AI, algorithms

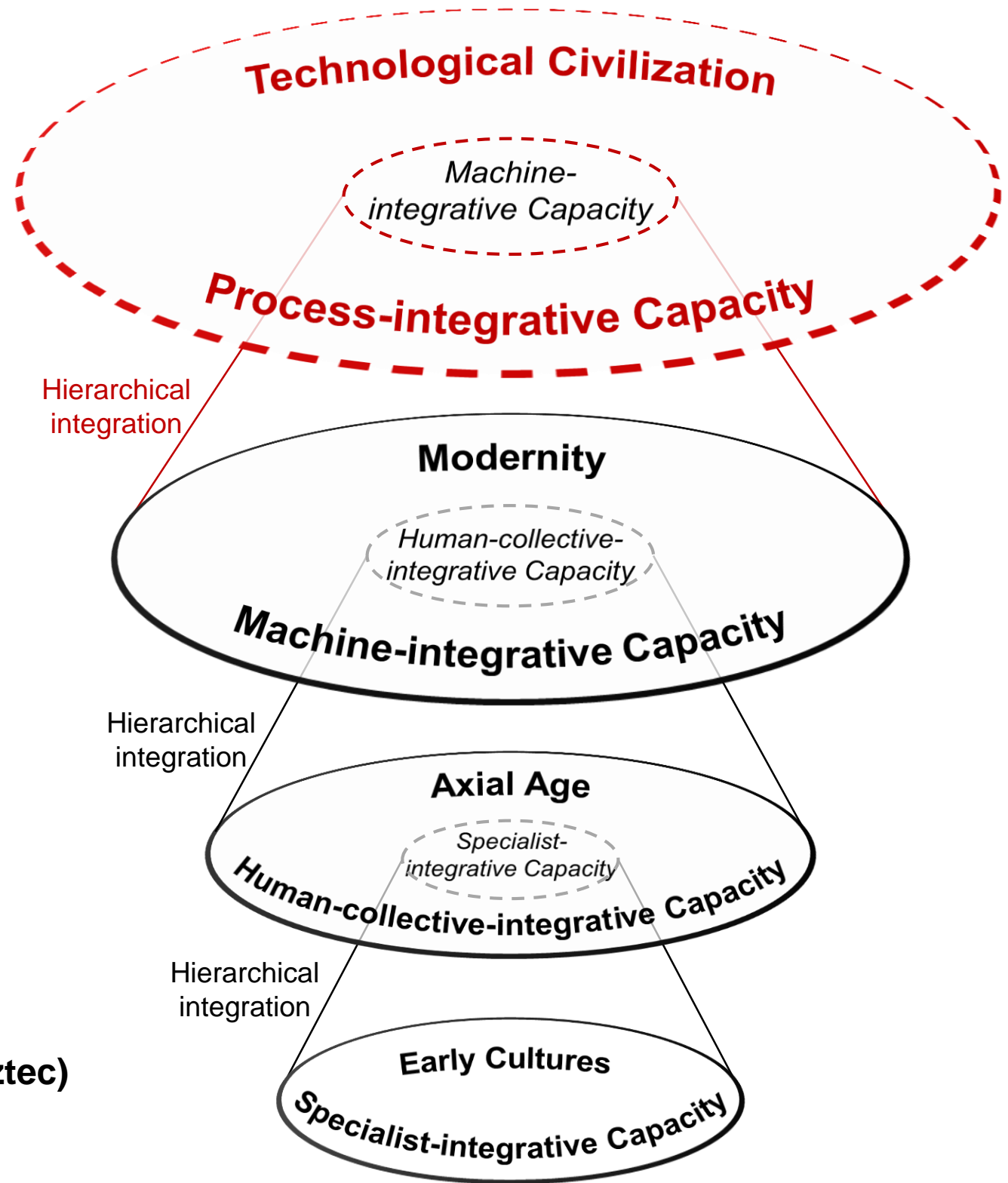
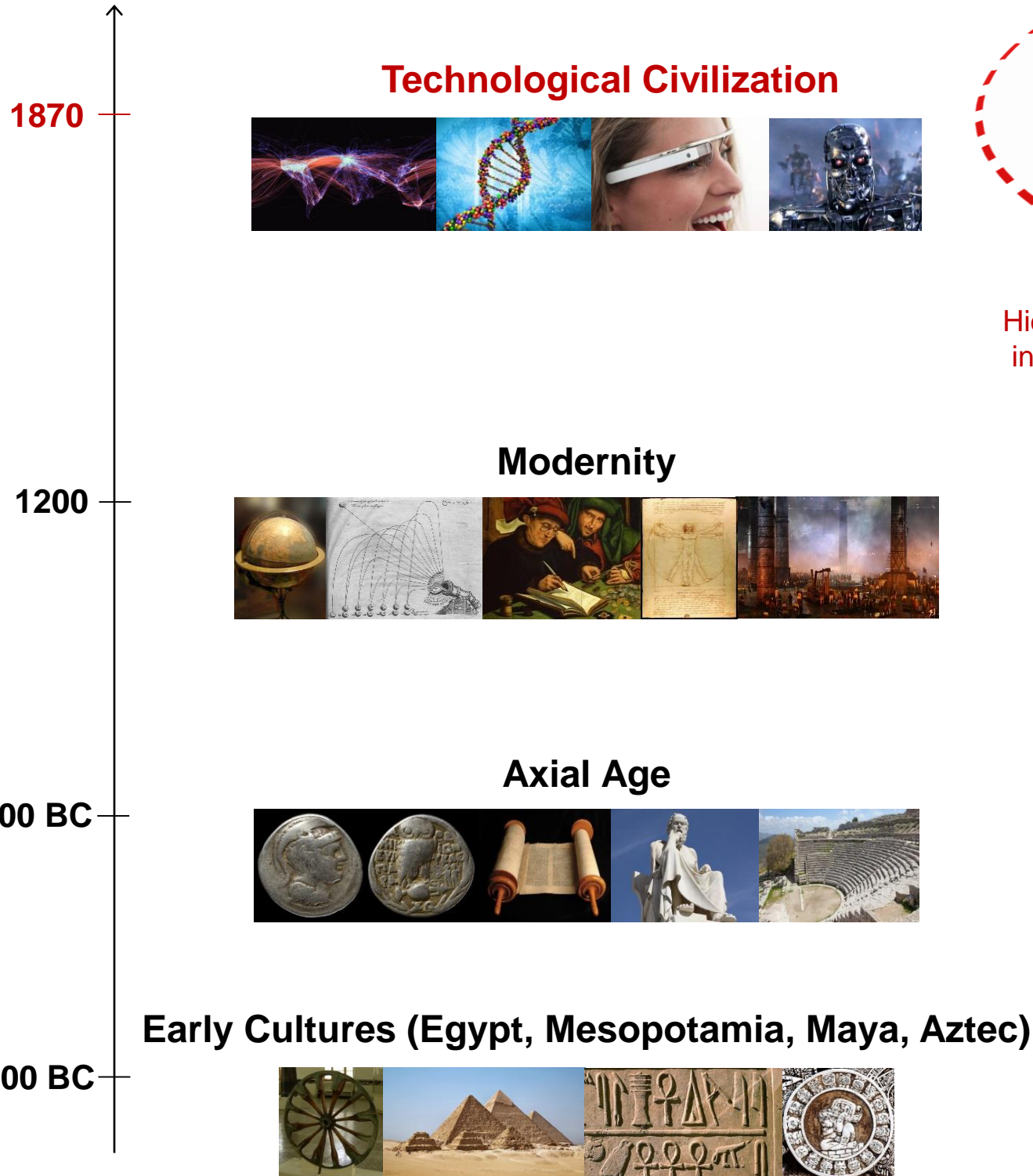


Stages in Civilizational History

Time

Civilizational Capacities

Layers of Integration / Recursion



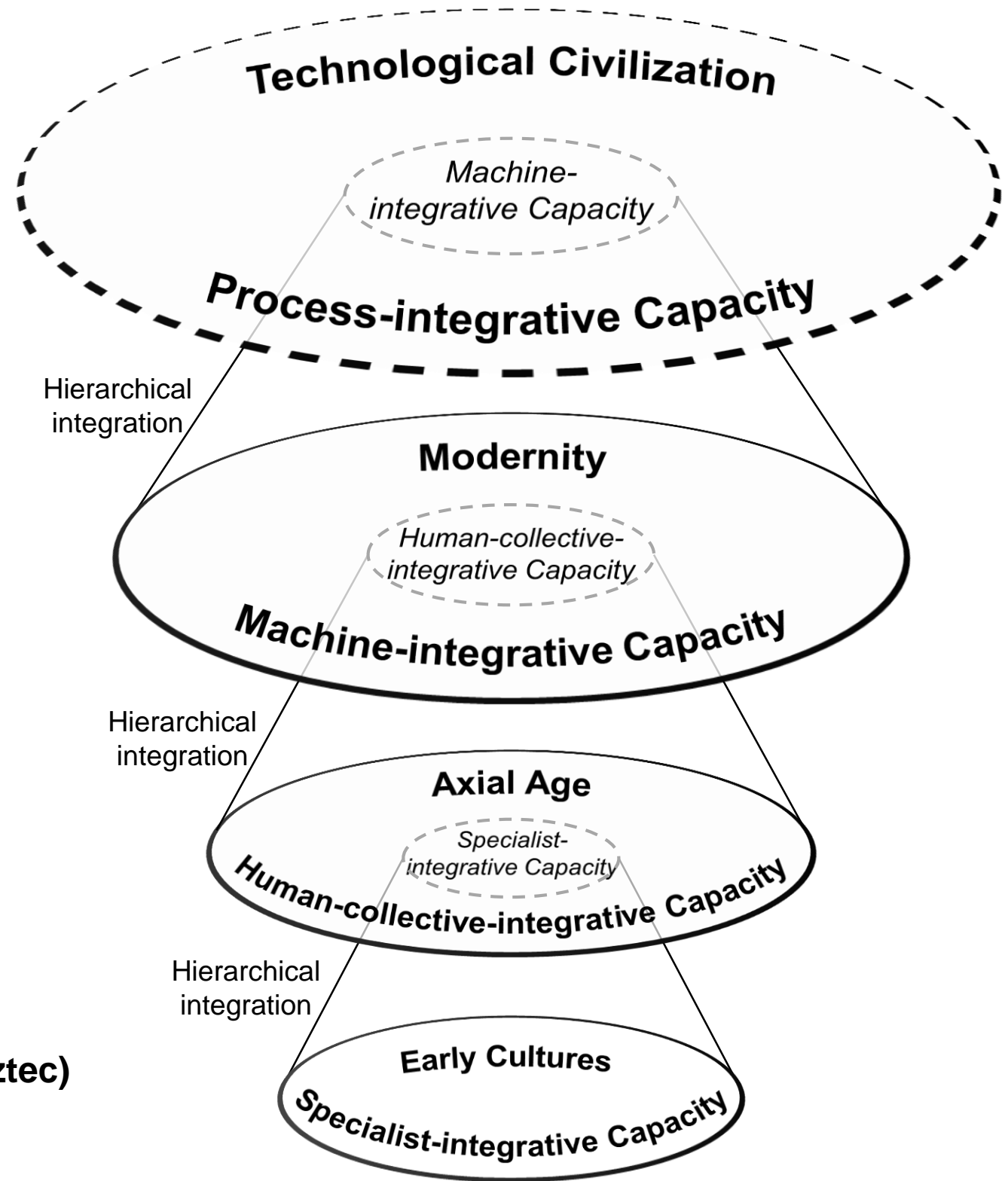
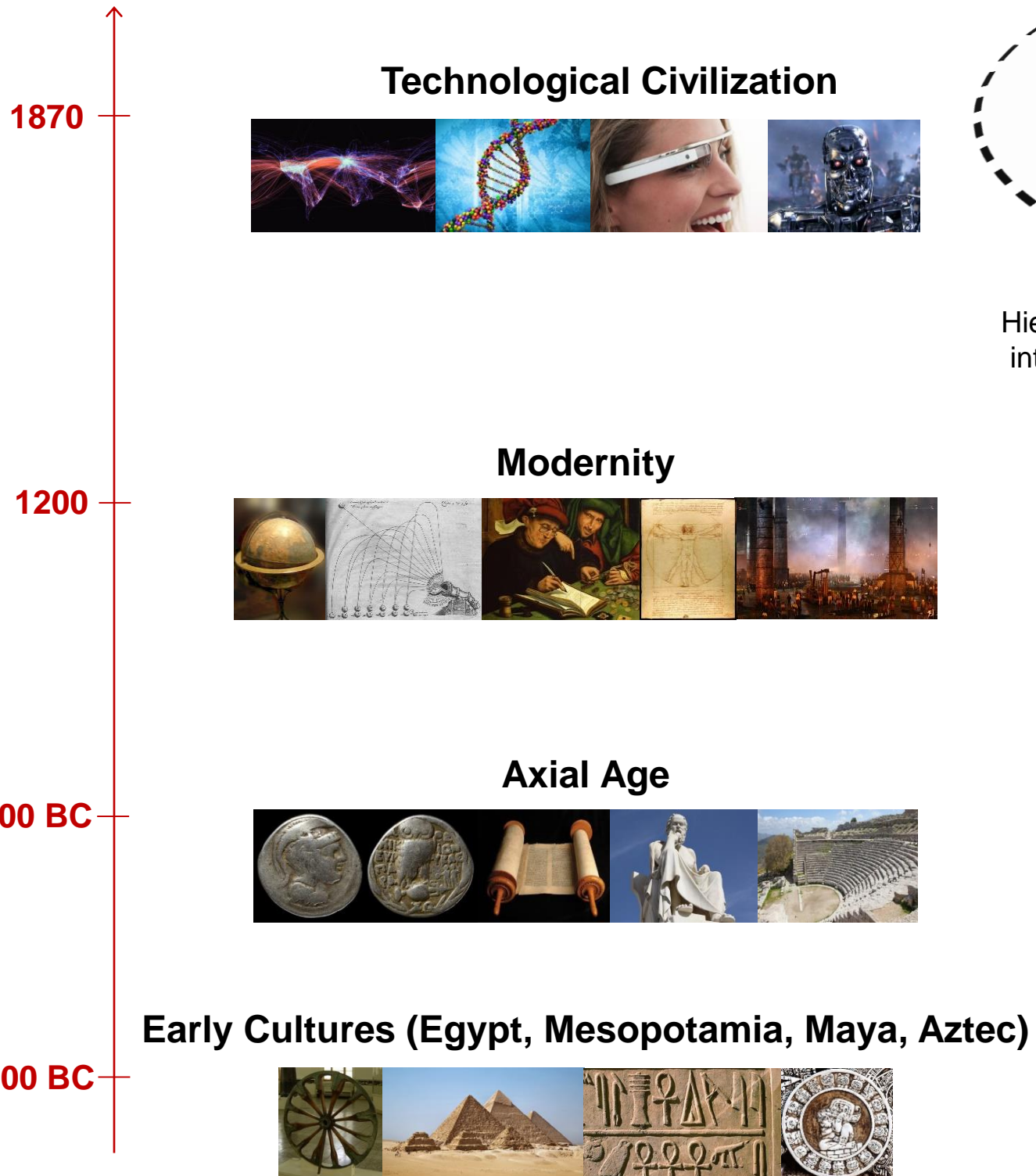
Potentials for a Catalyzation of a Systems Transition

Stages in Civilizational History

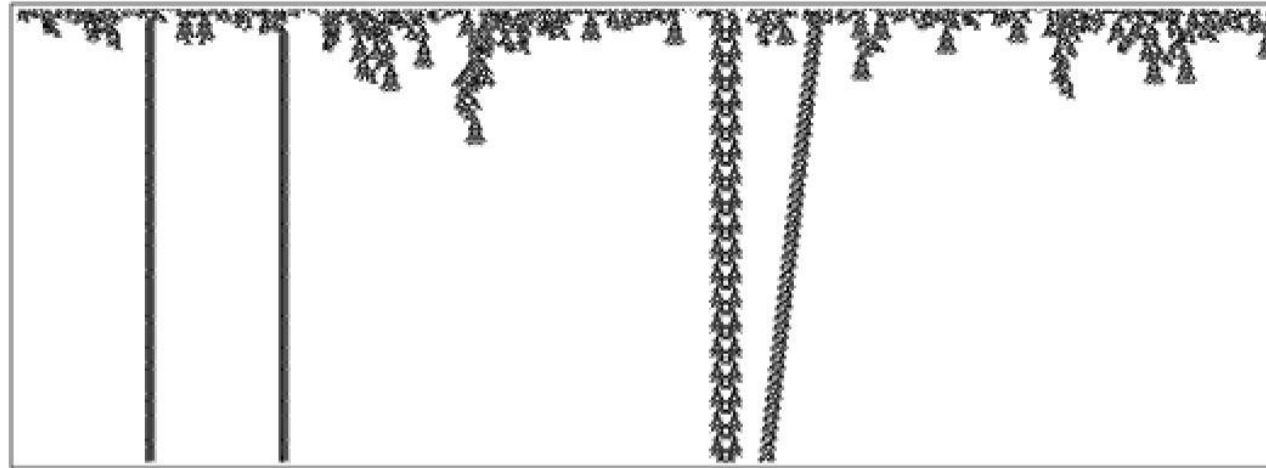
Time

Civilizational Capacities

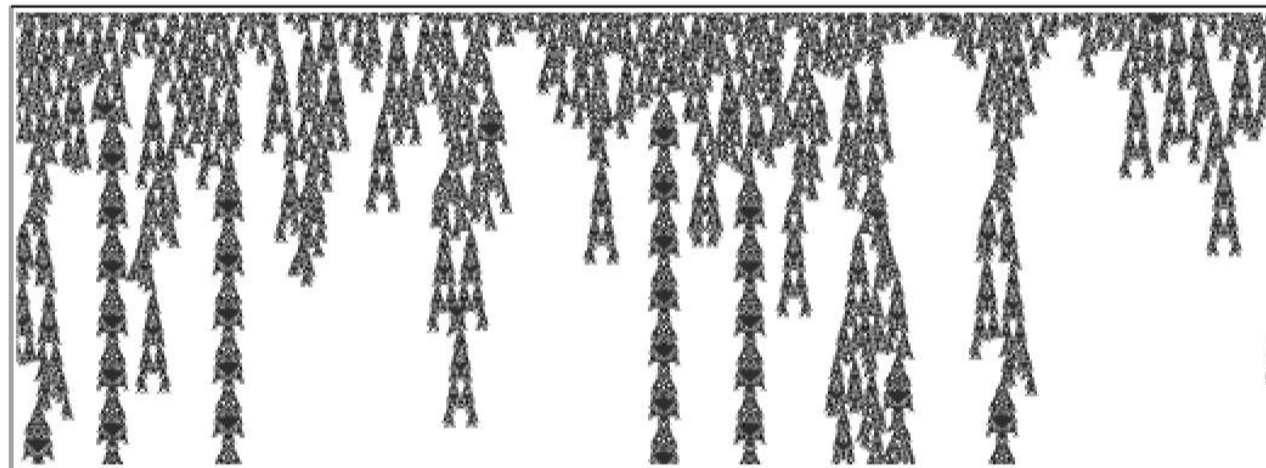
Layers of Integration / Recursion



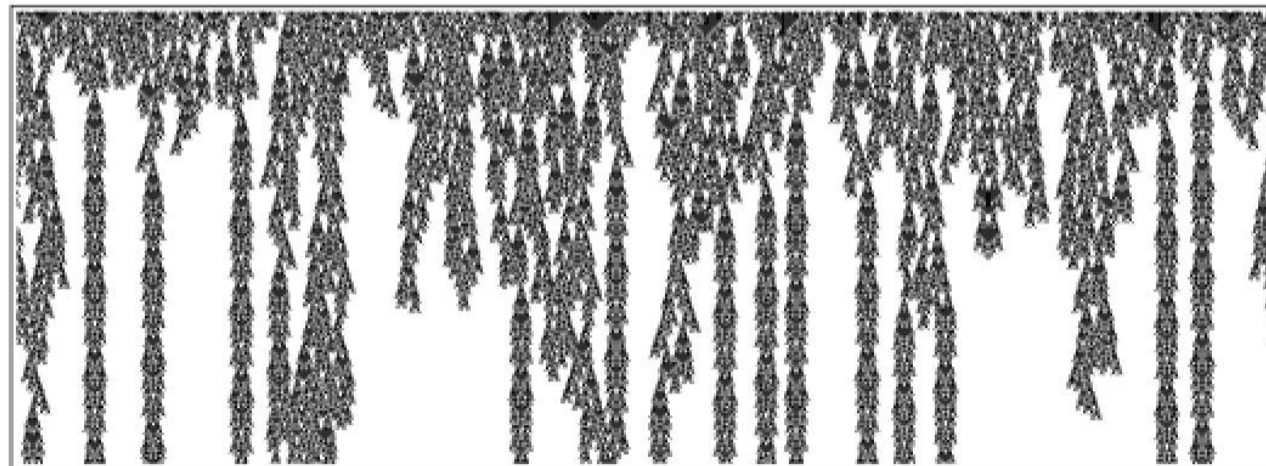
“Cone of Realization”



2 colors, next-nearest neighbors, code 20



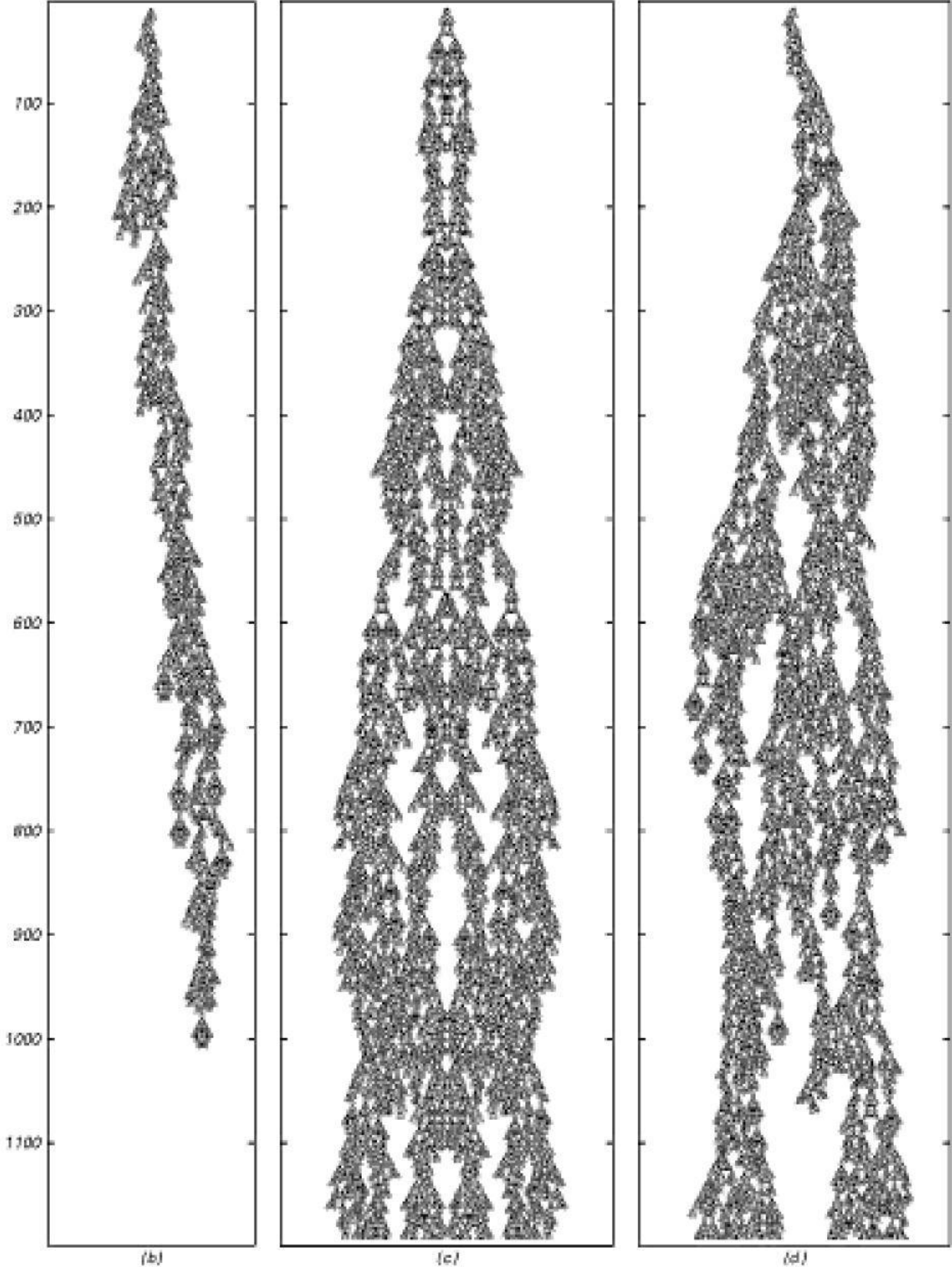
3 colors, nearest neighbors, code 357



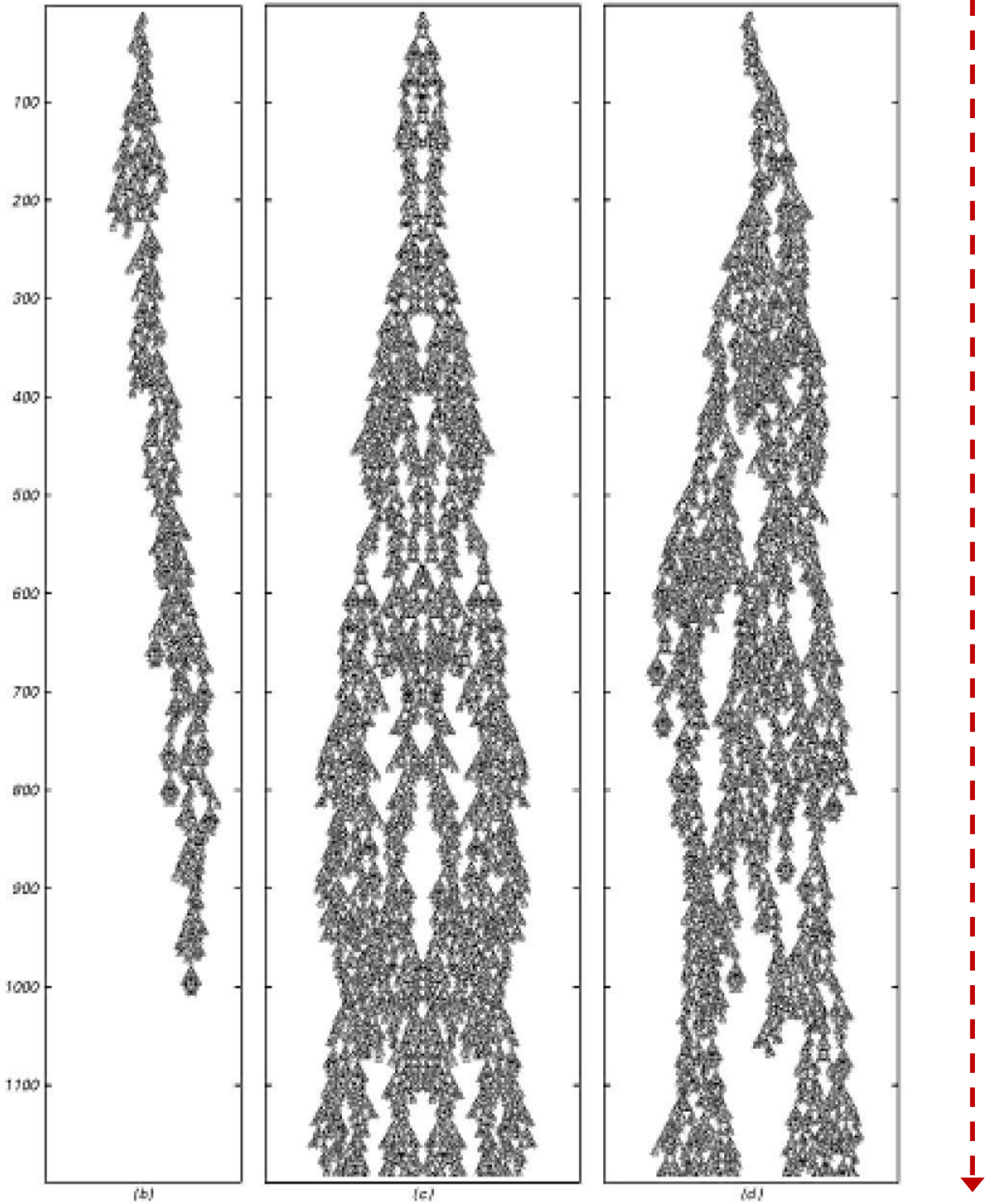
3 colors, nearest neighbors, code 1329

Three typical examples of class 4 cellular automata. In each case various kinds of persistent structures are seen.

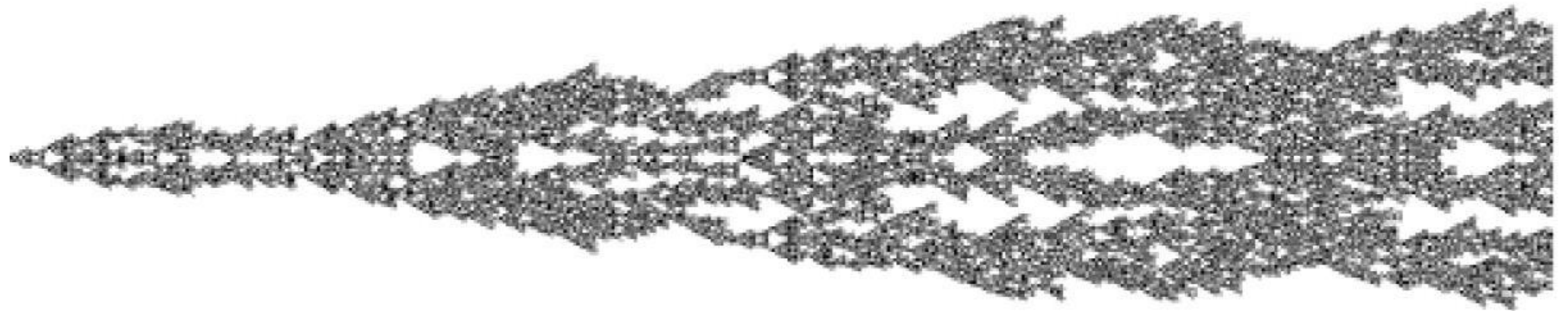
“Cone of Realization”



“Cone of Realization”

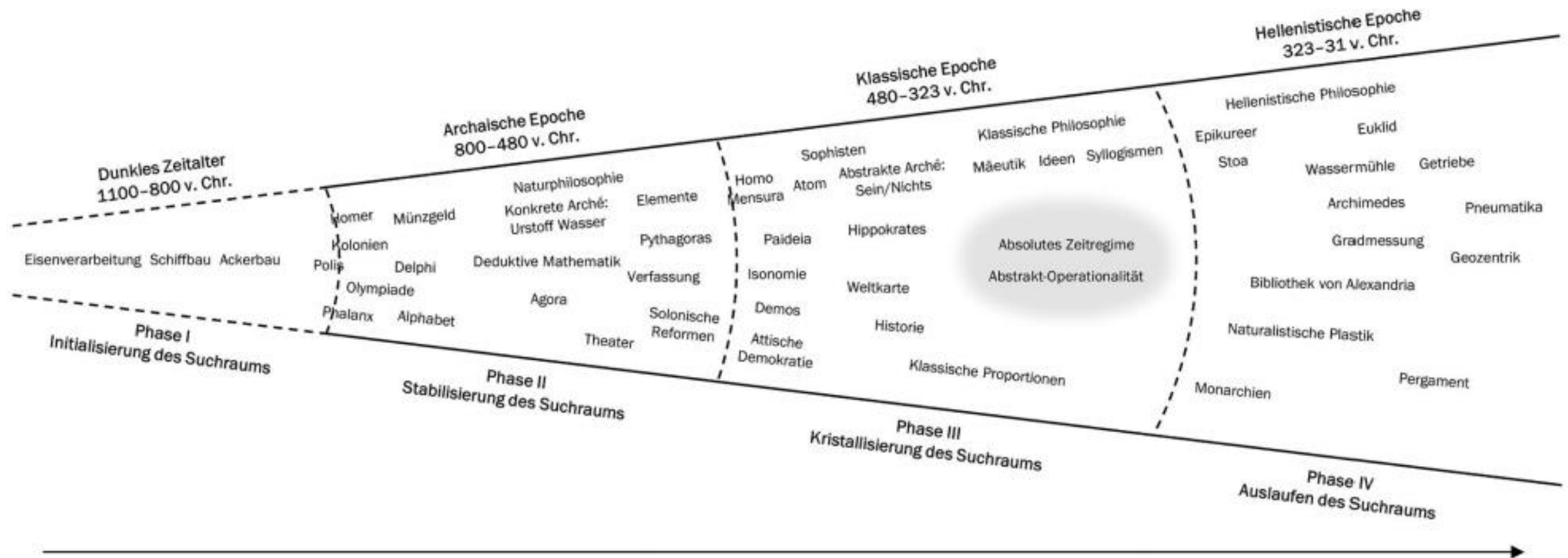


“Cone of Realization”



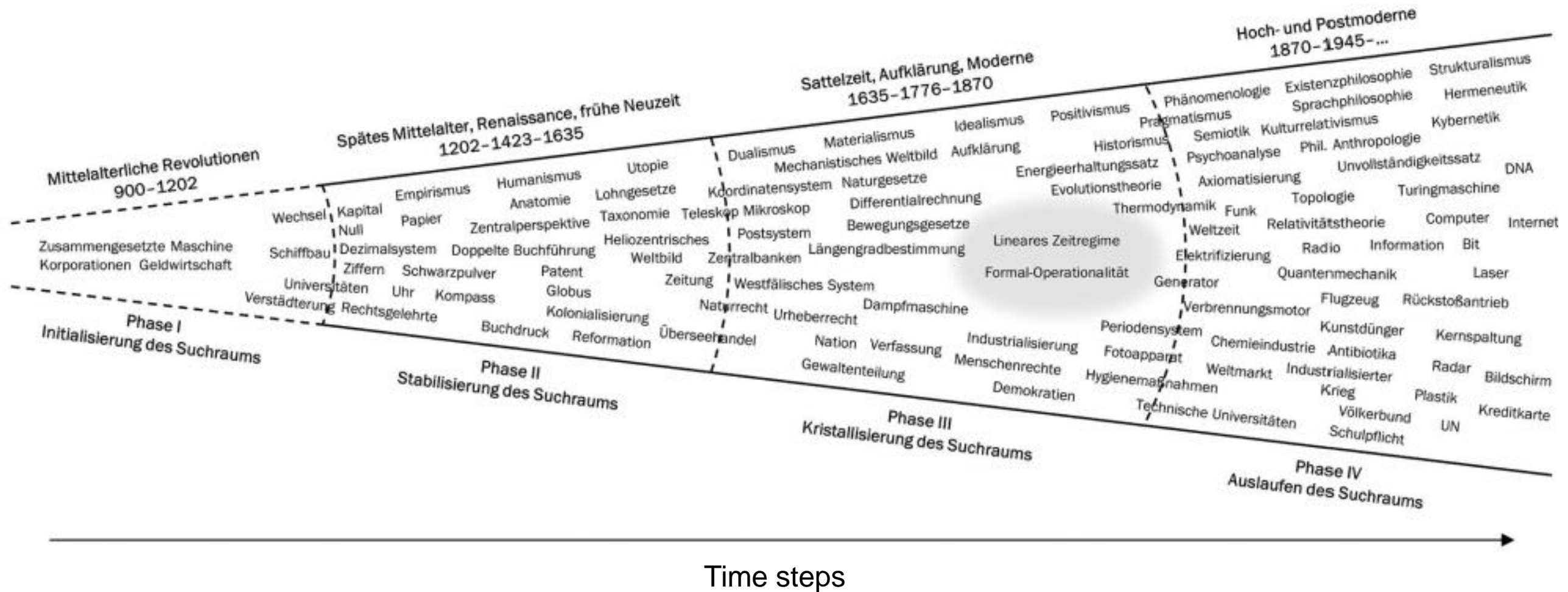
Time steps

“Cone of Realization” – Axial Age Greece (1100BC – 31BC)

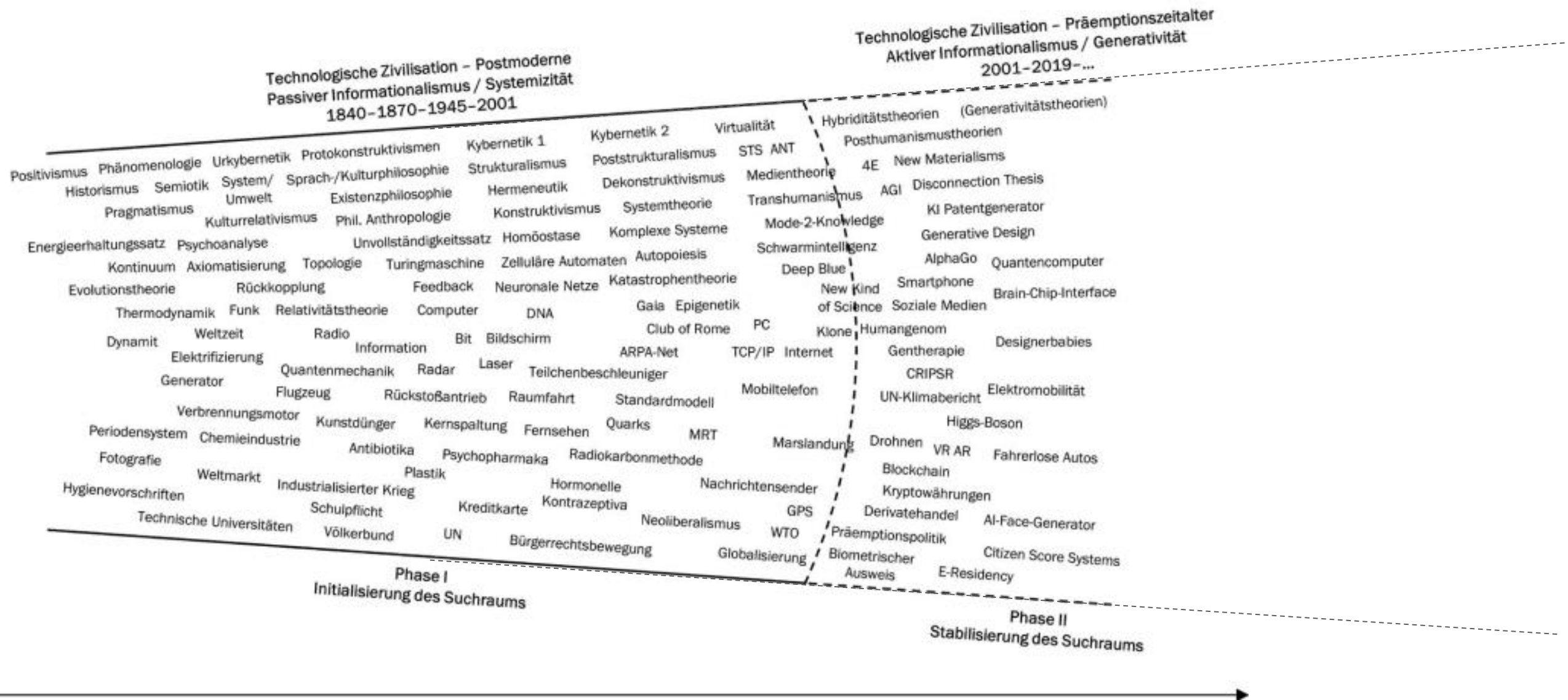


Time steps

“Cone of Realization” – Modernity (900–1870)



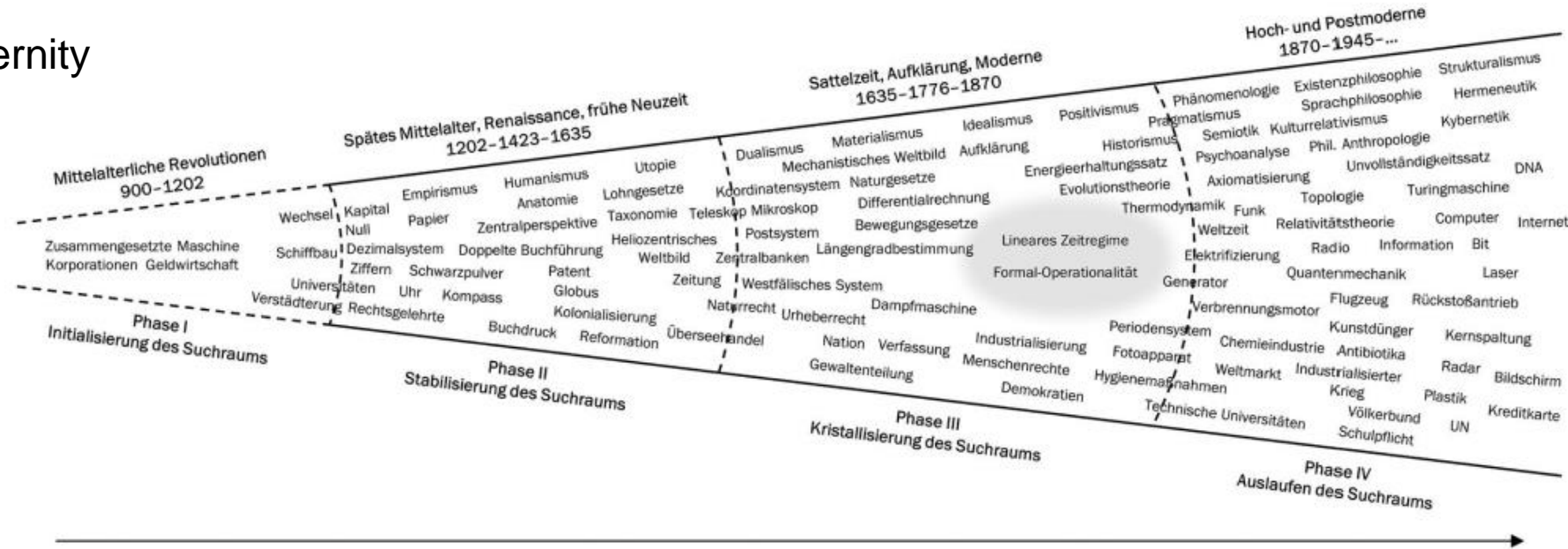
“Cone of Realization” – Technological Civilization (1870–2019–...)



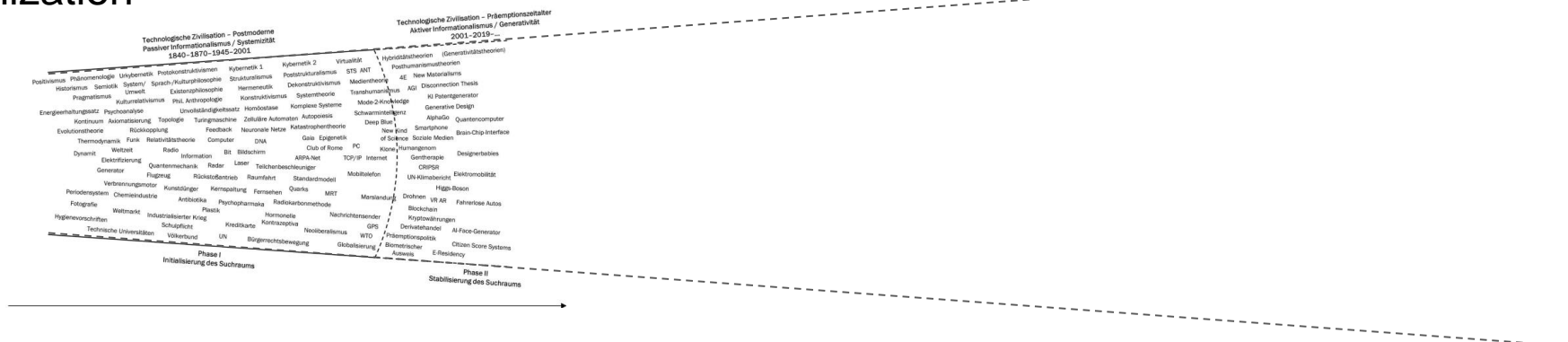
Time steps

Plagues as Catalyzers of Transitions

Modernity



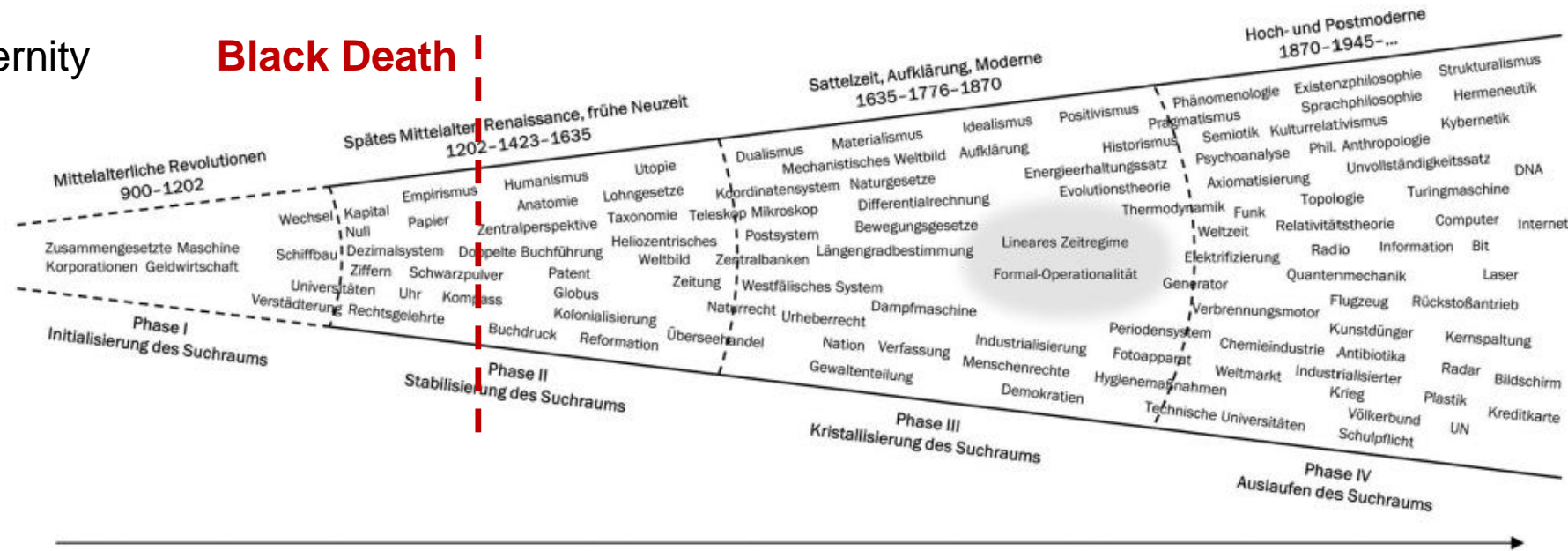
Technological Civilization



Plagues as Catalyzers of Transitions

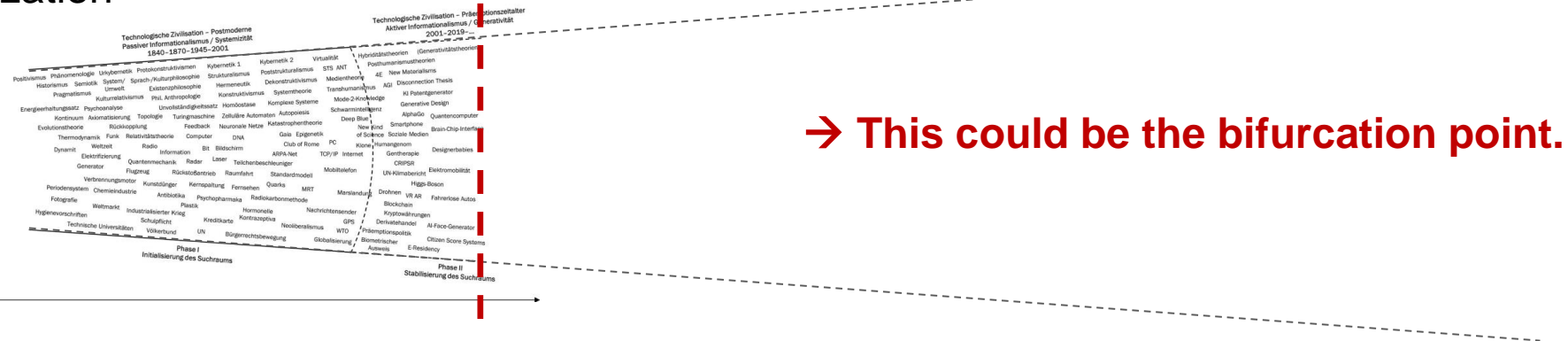
Modernity

Black Death



Technological Civilization

Corona

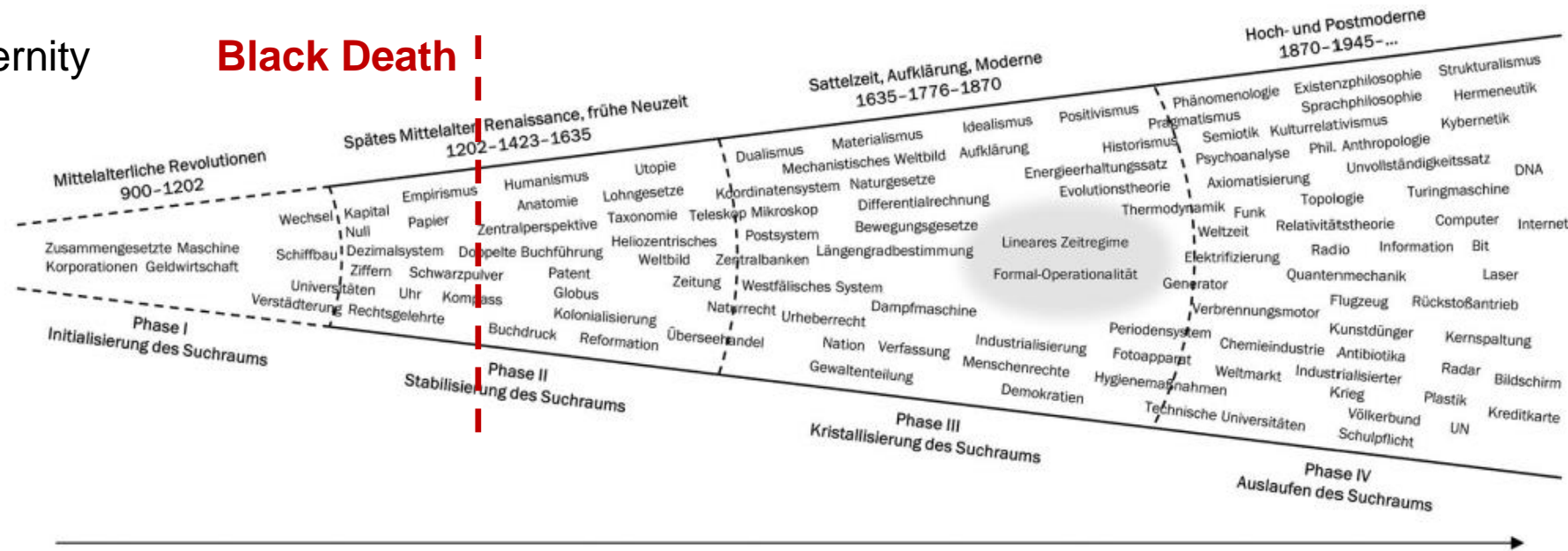


→ This could be the bifurcation point.

Plagues as Catalyzers of Transitions

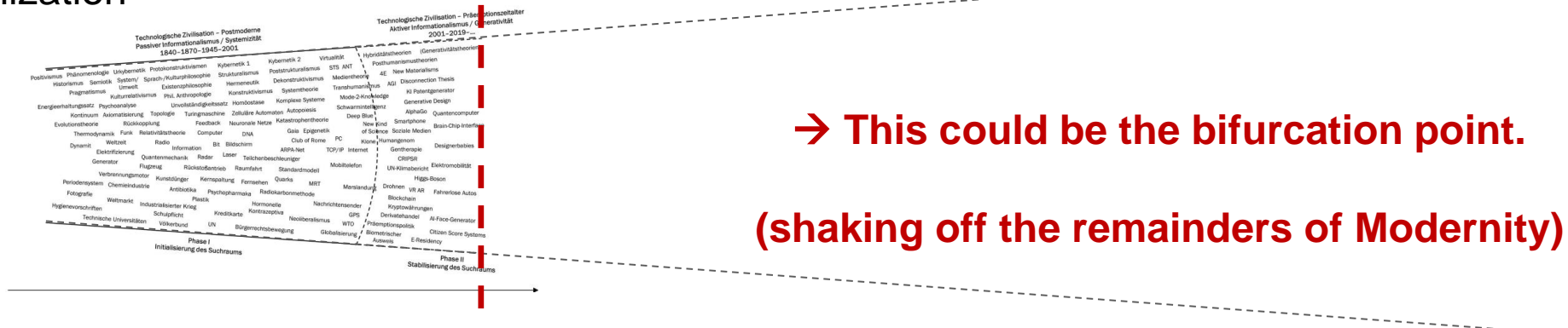
Modernity

Black Death



Technological Civilization

Corona



Thank you!

Thank you!

And good luck!

Literature Sources

Coronavirus Research

Imperial College COVID-19 Response Team, "Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand," 16th March 2020, DOI: <https://doi.org/10.25561/77482>

Plague

"The Report of the Paris Medical Faculty, October 1348," R. Hoeniger, ed., *Der Schwarze Tod* (Berlin, 1882), appendix III, pp. 152-6, translated by Martha Carlin, <https://sites.uwm.edu/carlin/the-report-of-the-paris-medical-faculty-october-1348/>

Scheidel, Walter: *The Great Leveler: Violence and the History of Inequality from the Stone Age to the Twenty-First Century*. Princeton University Press. 2017.

Herlihy, David: *The Black Death and the Transformation of the West*, Cambridge, Mass.: Harvard University Press, 1997.

Strothmann, Jürgen: „Der „Schwarze Tod“. Politische Folgen und die „Krise“ des Spätmittelalters“; in Meier, Mischa (Ed.): *Pest. Die Geschichte eines Menschheitstraumas*. Stuttgart: Klett-Cotta 2005, p. 179-198.

Buckl, Walter (Ed.): *Das 14. Jahrhundert. Krisenzeit*. Regensburg: Pustet 1995.

Wikipedia articles: Plague / Consequences of Black Death / Timeline of the Plague.

Civilizational History

Löffler, Davor: „Distributing Potentiality. Post-capitalist Economies and the Generative Time Regime,“ in *Identities: Journal for Politics, Gender and Culture*, Vol. 15, No. 1-2, 2018, pp. 8-44.

Löffler, Davor: *Generative Realitäten I. Die Technologische Zivilisation als neue Achsenzeit und Zivilisationsstufe. Eine Anthropologie des 21. Jahrhunderts*, Weilerswist: Velbrück Wissenschaft 2019.

Image Sources

Plague Doctor: https://upload.wikimedia.org/wikipedia/commons/e/ea/Paul_F%C3%BCrst%2C_Der_Doctor_Schnabel_von_Rom_%28coloured_version%29.png

The path of plague through Europe during the 14th century. Courtesy of Encyclopaedia Britannica, 1994. <http://www.jlgh.org/Past-Issues/Volume-4---Issue-1/The-Making-of-a-Pandemic.aspx>

Yersinia Pestis: <https://img.br.de/336c4781-33bc-4a88-8662-6205f4605edf.jpeg?w=1800>

Victims of bubonic plague: James, Eastman, "The Making of a Pandemic: Bubonic Plague in the 14th Century," *The Journal of Lancaster General Hospital*, Vol. 4 – No. 1, Spring 2009, p. 12.

Yersinia Pestis fluorescent: https://de.wikipedia.org/wiki/Datei:PHIL_1918_lores_Floureszenz_Yersinia.jpg

Rat: https://de.wikipedia.org/wiki/Wanderratte#/media/Datei:Rattus_norvegicus_1.jpg

Franciscans martyrs for conversion of world: <https://vistapointe.net/image-post/8073-black-death-wallpaper-8.jpg.html>

Rat Flea: https://de.wikipedia.org/wiki/Rattenfloh#/media/Datei:Xenopsylla_cheopis_ZSM.jpg

Human Flea: <https://upload.wikimedia.org/wikipedia/commons/thumb/c/cd/PulexIrritans.jpg/640px-PulexIrritans.jpg>

Population at the time of the Great Plague: Langer, W. L. *The Black Death*. *Sci. Am.* 210, 1964, p. 114–121, https://1.bp.blogspot.com/-Jur5-IofN7I/W0y2p_Xb_al/AAAAAAAAAhI0/dpiOBO6aemABrn0UOZIUuUb5BsvmIYeSACLcBGAs/s1600/European-Population-at-the-time-of-the-Great-Plague-from-Langer-1964.png

Demography World Population: <https://pages.uwc.edu/keith.montgomery/Demotrans/demtra1.jpg>

Images illustrating civilizational stages: Wikipedia / Creative Commons

Stages in history as recursive layers of integration: Davor Löffler, *Generative Realitäten I. Die Technologische Zivilisation als neue Achsenzeit und Zivilisationsstufe. Eine Anthropologie des 21. Jahrhunderts*, Weilerswist: Velbrück Wissenschaft 2019, p. 599

Cellular Automata: Stephen Wolfram, *A New Kind of Science*, Champaign: Wolfram Media 2002, p. 282, 754

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