# Museums and the Computer (The Digital Museum)

Global Focus on Knowledge
Lecture Series

Masanori Aoyagi
Komaba Campus
03.06.2010

What is a museum?

- Locus for limited and partial presentation and preservation of aspects of past cultures and historical periods that people want to know about and restore.
- There are major disparities between the true faces of eras and cultures and limited presentations.
- The motive of investigative (scientific) research is to bridge these gaps.
- Museums encourage the desire to learn, know and enlighten.
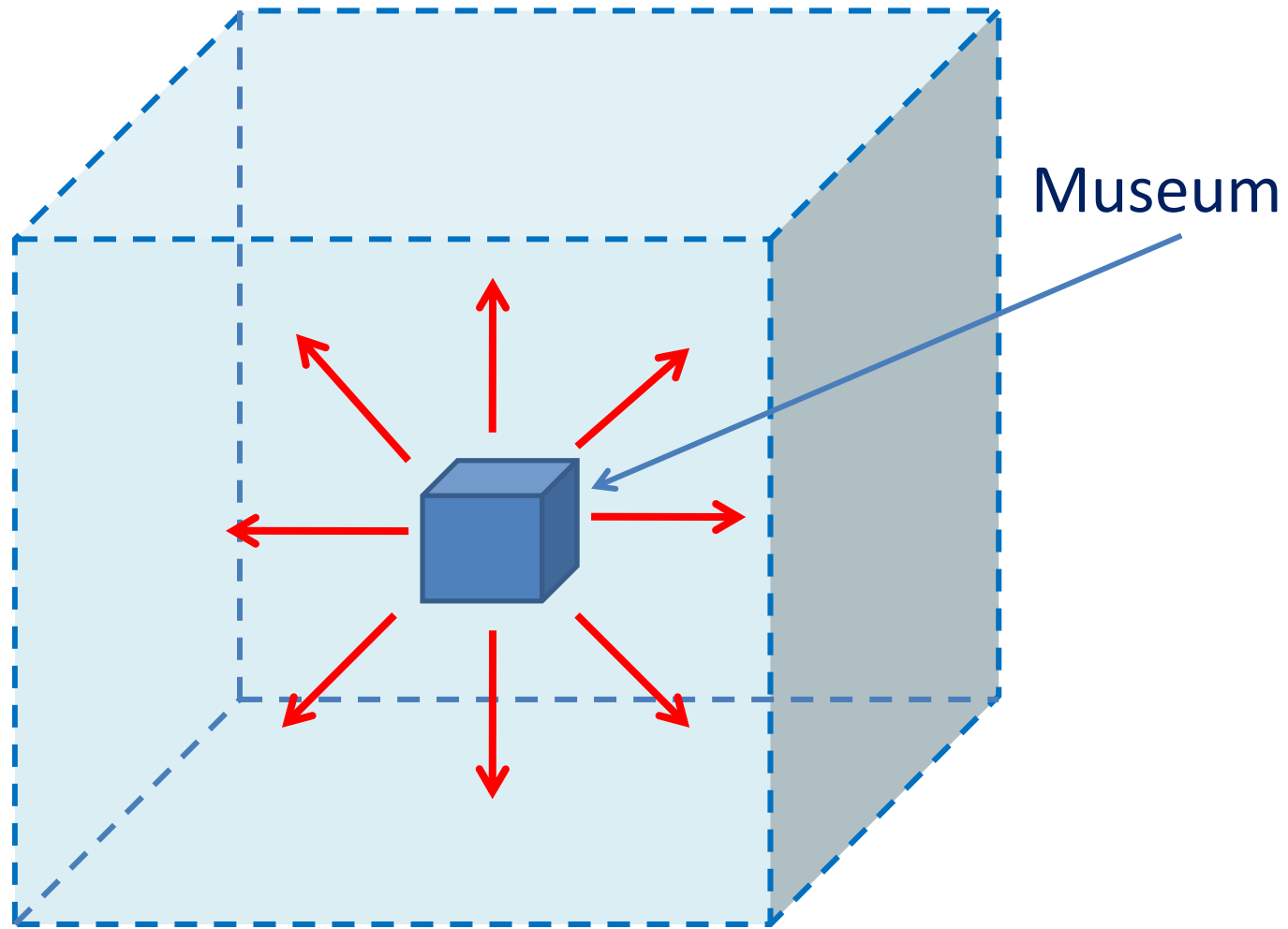
Museum

Real face of a given age or culture

Science・Scholarship・Technology

- curiosity driven
  - science（the sciences...)

- genealogical restrictions
  - restricted knowledge   scholarship（the humanities...)

- mission oriented
  - design sciences   technology（engineering, economics...)

Digital Museum

- curiosity driven
  - science（the sciences…）
- genealogical restriction
  - restricted knowledge scholarship（the humanities. . .）
- mission oriented
  - design sciences   scholarship（engineering, economics. . .）

  The above are either part of or in harmony with the museum approach.

Conventional Museums and Digital Museums

Complementary relationships

actual specimens	AV・pictures・digital information
rare ・ unique	reproduction in large numbers through copying
completed	correlations
characteristic attributes	endowed attributes

Conventional Museums and Digital Museums

Complementary relationships or possibilities for such

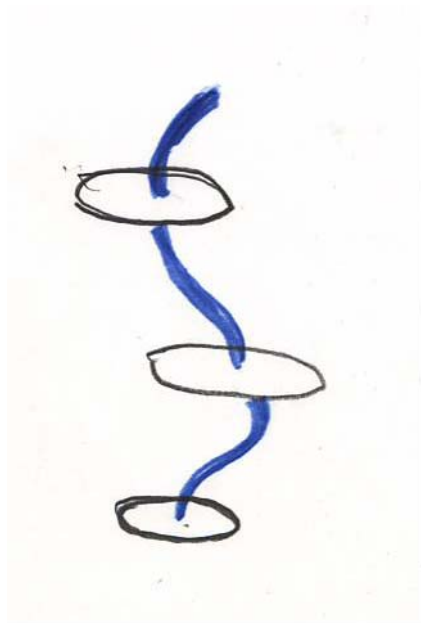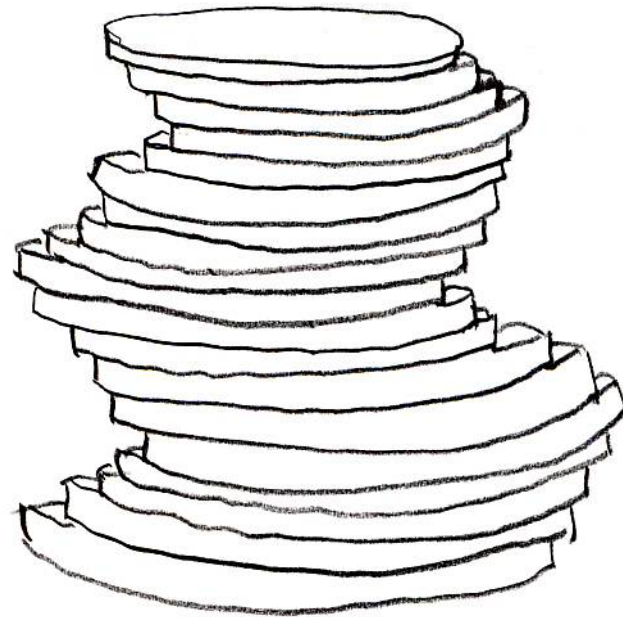|	
information enhancement	information development/spread
outline · framework	borderless
synchronic	diachronic
static	dynamic
objects	events

Restoration and change in portrayals of eras and cultures

previous restoration   restoration from now

Conventional Museums and Digital Museums

Complementary relationships or possibilities for such

information enhancement	information development/spread
outline・framework	borderless
synchronic	diachronic
static	dynamic
objects	events

Strong points and weak points of conventional museums

- Strong Points
  - Genuineness　authenticity（questions of genuine vs. spurious...）
  - Substance・Totality　entity（loss, change...）
  - Secular・historical　historicity（assigning era names...）
- Weak Points
  - When renovating, changing exhibits, does not leave behind the previous appearance
  - Disadvantages of being static
  - Material objects become amorphous "matters"

Conventional Museums and Digital Museums

- Pursuing the possibilities beyond complementariness
  - Removing the limits of conventional museums
  - Providing conventional museums with new possibilities
  - Creating new roles▪functions for museums.
  - Creating a museum image appropriate to the society of the near future

Digital Museums

- Current Limits
  - Reality
  - Sustainability
  - Serendipity
  - Entirety, Totality
  - Self-growing
  - Missing
  - ....

Digital Humanities and Digital Museums

- Digital Humanities
  - Fields in which computing can be interposed into research · education · diffusion · innovation for the humanities
  - Because the parameters are so broad, there are doubts as to whether this can in fact be established in fields or disciplines.

- Digital Museums
  - The targets are specific
  - Conventional museums have an established line of presentation
  - There is a strong likelihood that this will be established as a field for research · education · diffusion · innovation.
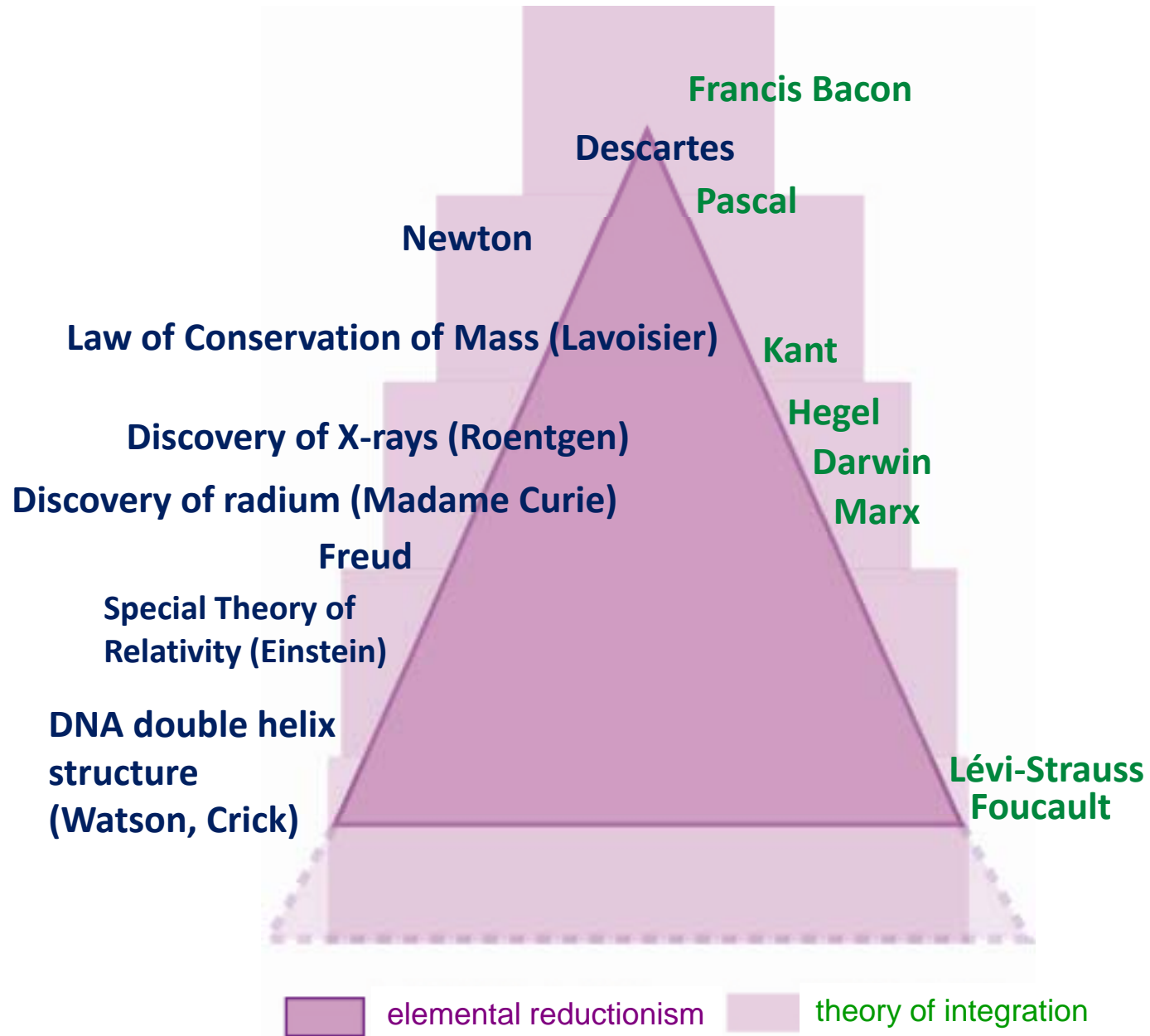
Reductionism and Holism

- Reductionism（reductionism, elemental reductionism）
  - Natural philosophers of ancient Ionia (Thalēs …)
  - Ancient theory of atoms? ?

  (Dēmokritos [Democritus]…)
  - René Descartes
  - ······

- Holism（holism, theory of integration (unification)
  - Natural philosophy of German Romanticism
  - Biology in reference to physics   study of animation
 - ······

Reductionism and Holism

- Reductionism
  - Mechanistic theory image of the world
  - Atomistic theory image of the world
  - Genetic theory image of the world
- Holism, theories of totality
  - Organic theories, systems theories
  - Biological diversity
  - Cultural diversity

Francis Bacon

Descartes

Pascal

Newton

Law of Conservation of Mass (Lavoisier)

Kant

Hegel
Darwin
Marx

Discovery of X-rays (Roentgen)

Discovery of radium (Madame Curie)

Freud

Special Theory of
Relativity (Einstein)

DNA double helix
structure
(Watson, Crick)

Lévi-Strauss
Foucault

elemental reductionism   theory of integration
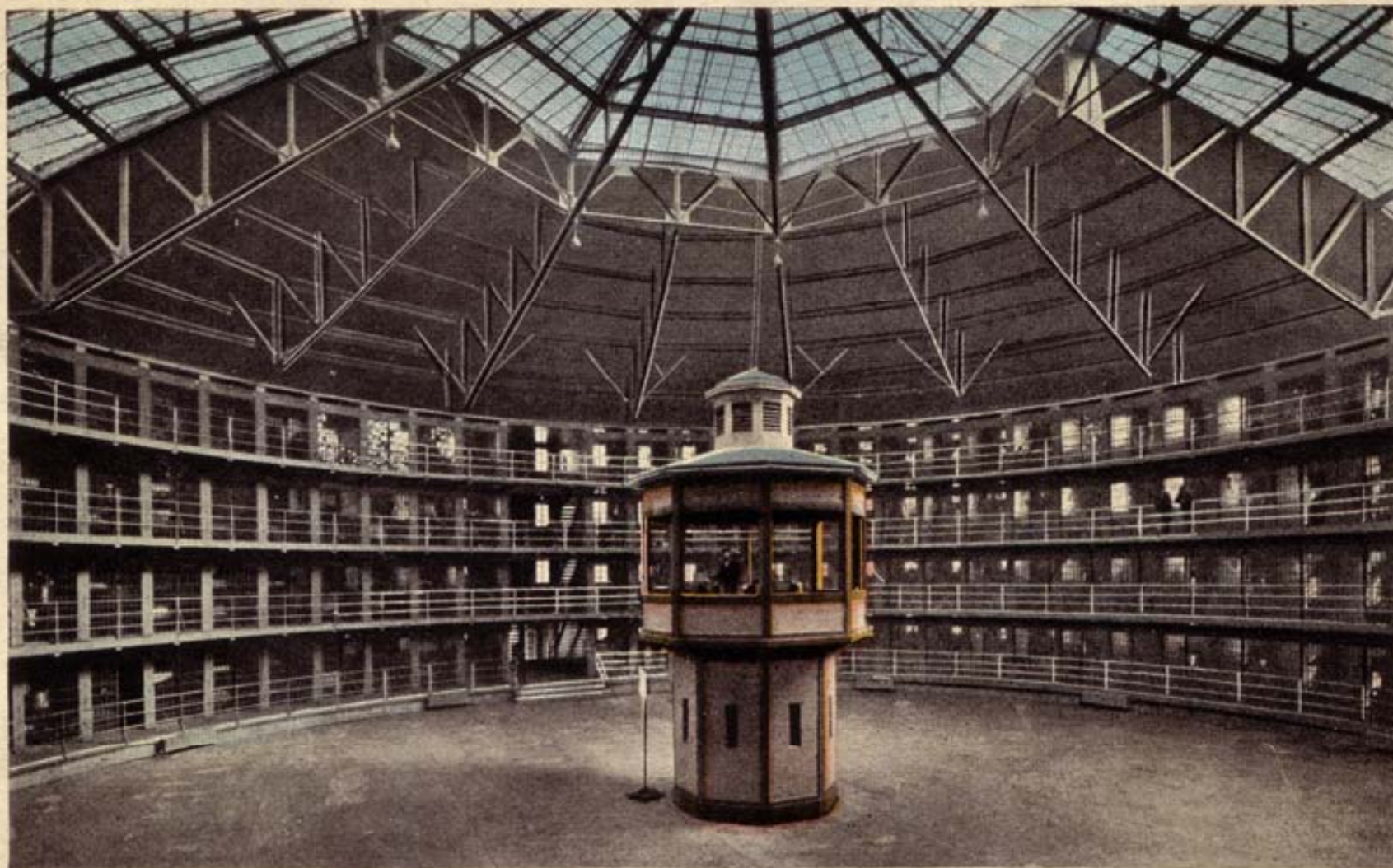
Panopticon

- Omni-observation surveillance system
  - Jeremy Bentham
  - From the standpoint of utilitarianism
- Michel Foucault
  - *Naissance de la prison, Surveiller et punir* *Discipline and Punish: The Birth of the Prison*
  - Efficient enforcement of one-sided power
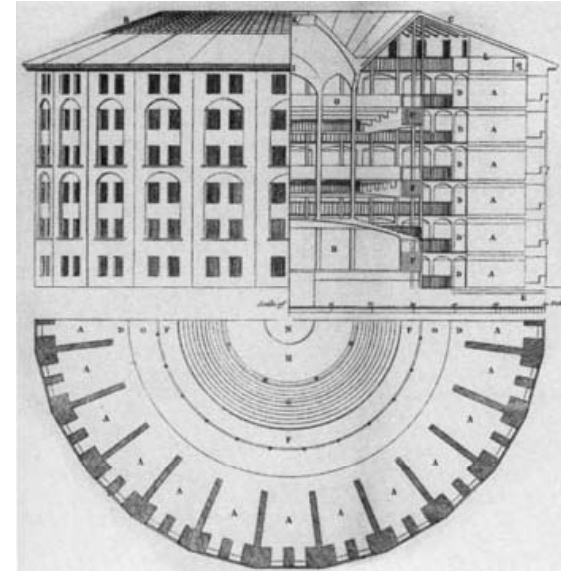
"Interior view of cell house, new Illinois State Penitentiary at Stateville, near Joliet, Ill."

Reductionism and Holism
Their Merits and Demerits

- Reductionism
  - Tremendous contributions to modern/contemporary science
  - In the future will continue to be a key methodology
  - Science & technology-first philosophy
  - Nuclear weapons, genetic modification, environmental problems. . .
- Holism
  - Regression in modern/contemporary society = Ebb of ideology/philosophy
  - Harmony, fusion, discipline (groups and individuals)
  - Decline in true creativity and ability to conceptualize. . .
  - Mysticism

Magnetic Fields for Digital Technologies

- Verifying the enhancement, development and possibilities depending on the scope framework provided.

- Convergence of elemental reductionism towards holism

- Issues of environmental theories, sustainability theories, etc. as reflections of holism.
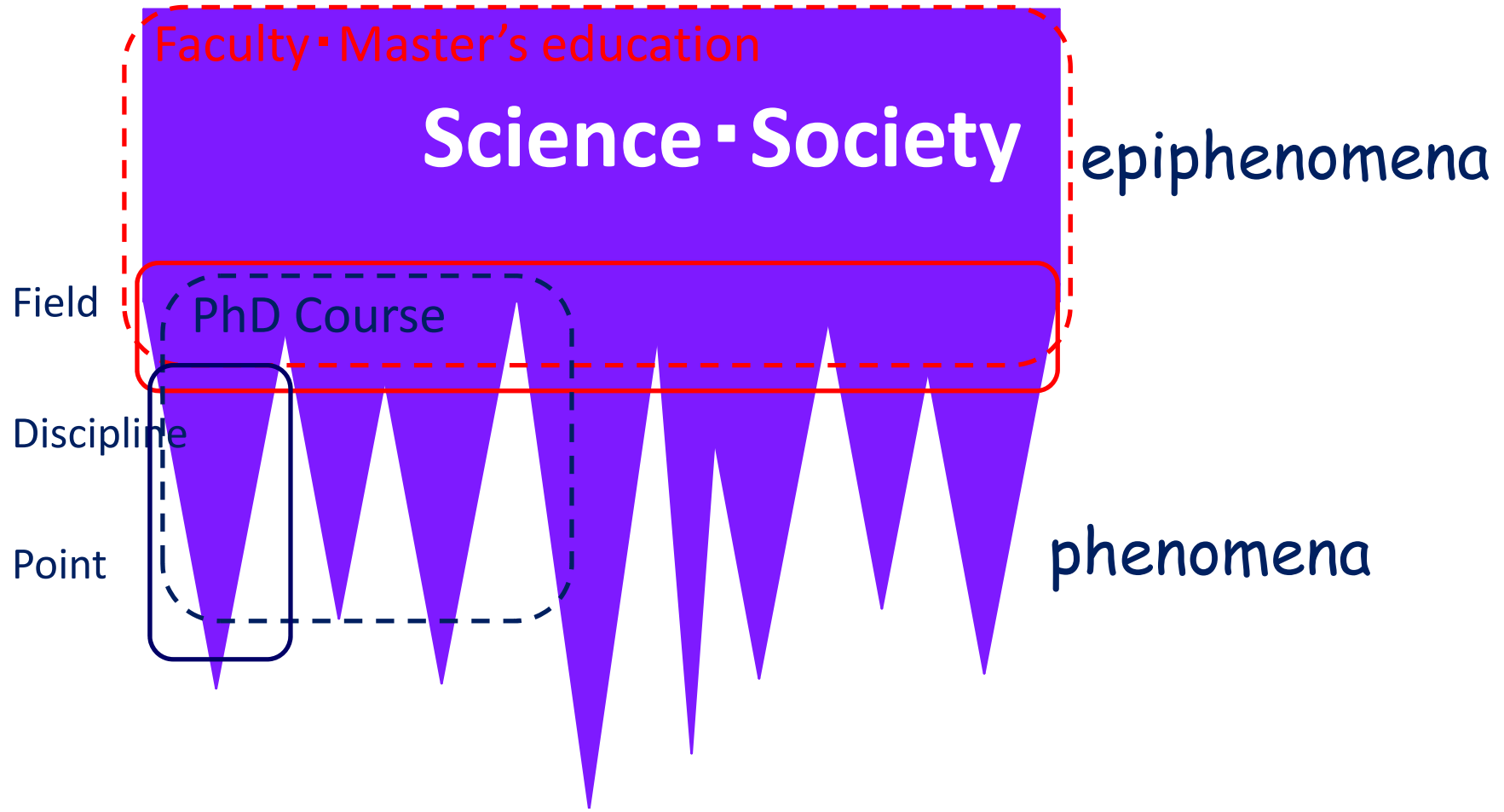
Examples from the UK

- Taught courses（faculties・master's courses）

- Research courses（PhD courses）

- Major demarcation between the two course levels

Research course (PhD course)

- For PhD dissertations, the following two points account for 20 ~ 30 percent of the whole process
  - Arrangement of overall argument
  - Clarification of overall position of the author's argument = Position Paper
- Hasty entry into details of individual research is avoided