

“Science and Ethics: The Choices that Confront Us”

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March 21, 2007

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SFU Lecture Series, Spring 2007:

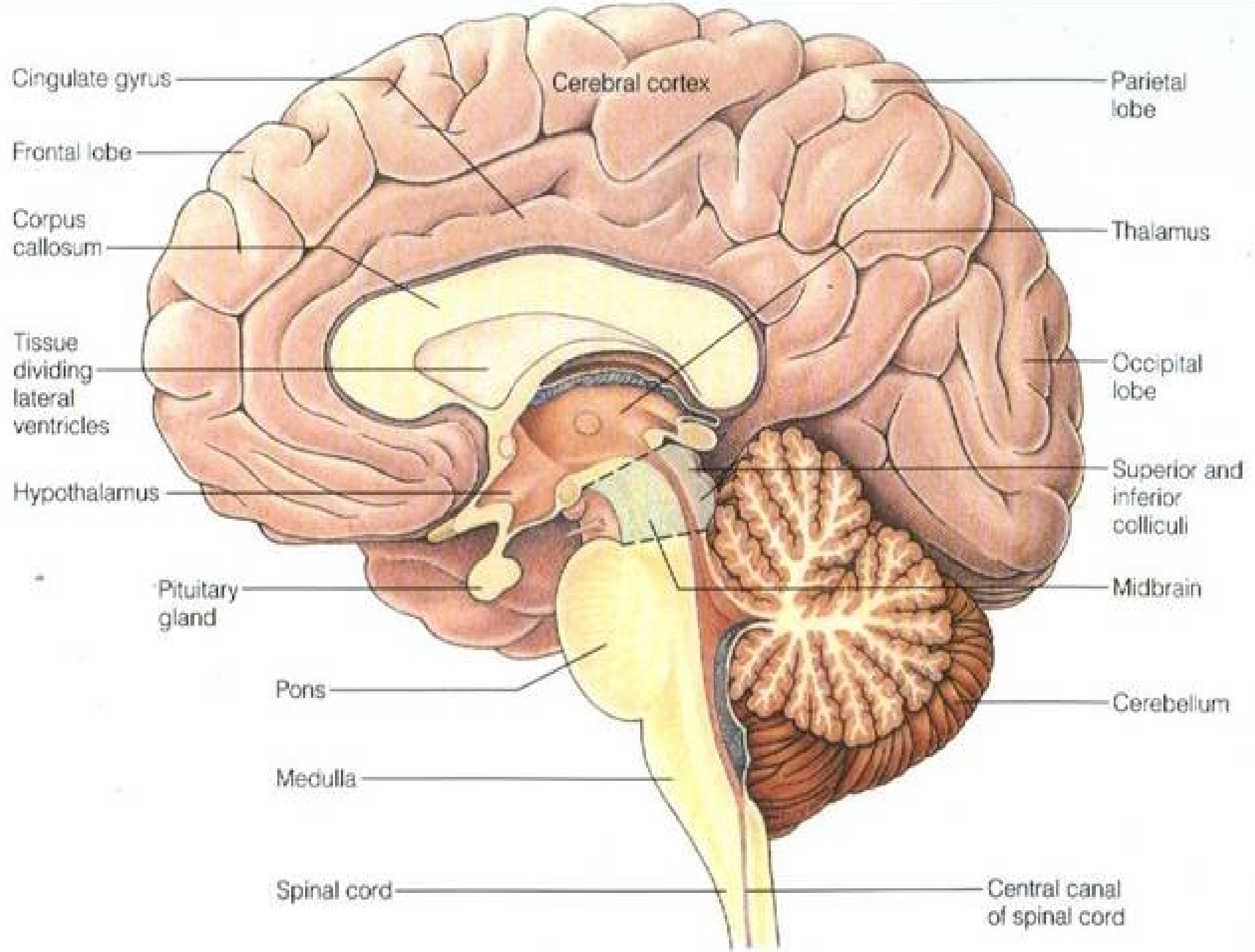
“Science, Up Close and Personal”

February 28, March 14, March 21, 2007

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Part I:
A Brief Review









ESQUISSE

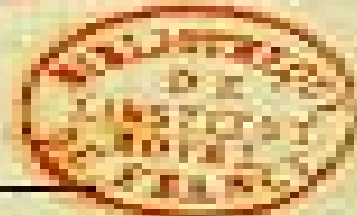
D'UN

TABLEAU HISTORIQUE

DES PROGRES DE L'ESPRIT HUMAIN

OUVRAGE POSTHUME DE COMTE.

QUATRIÈME ÉDITION.



A PARIS :

CHEZ AGASSI, rue des Écoles, N^o 18.

AN VI (1798).

The Dual Significance and Interaction of Modern Sciences for the “Enlightenment Project”

Advances in
the physical
sciences –
chemistry,
physics,
biology **A**



Advances in the
sciences of the
social sphere
(incl. the
“moral
sciences)” **B**

The Two Interconnected Dimensions of the Enlightenment Project

A. “Inventive Science”:

- Technologies and Useful Products
- New concepts of nature

B. “Transformative Science”:

- New understanding of social processes
- New social institutions and programs

The “Enlightenment Project” as Practical Objectives: “Inventive” and “Transformative” Science

Applications
of the physical
sciences:
Technologies,
products: **A**

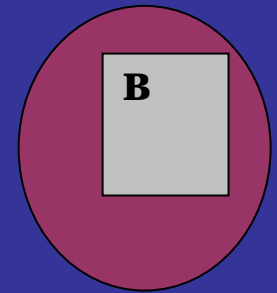
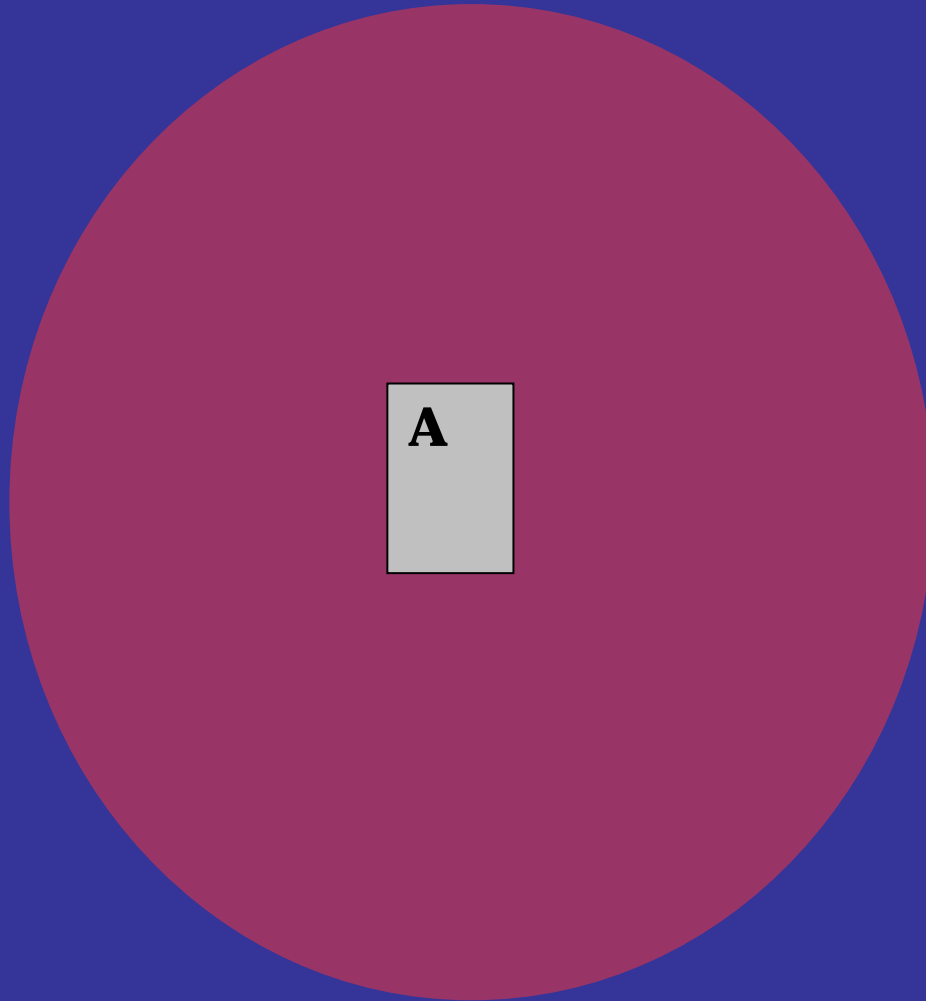


Applications
of the social
sciences:
Institutions,
behaviors **B**

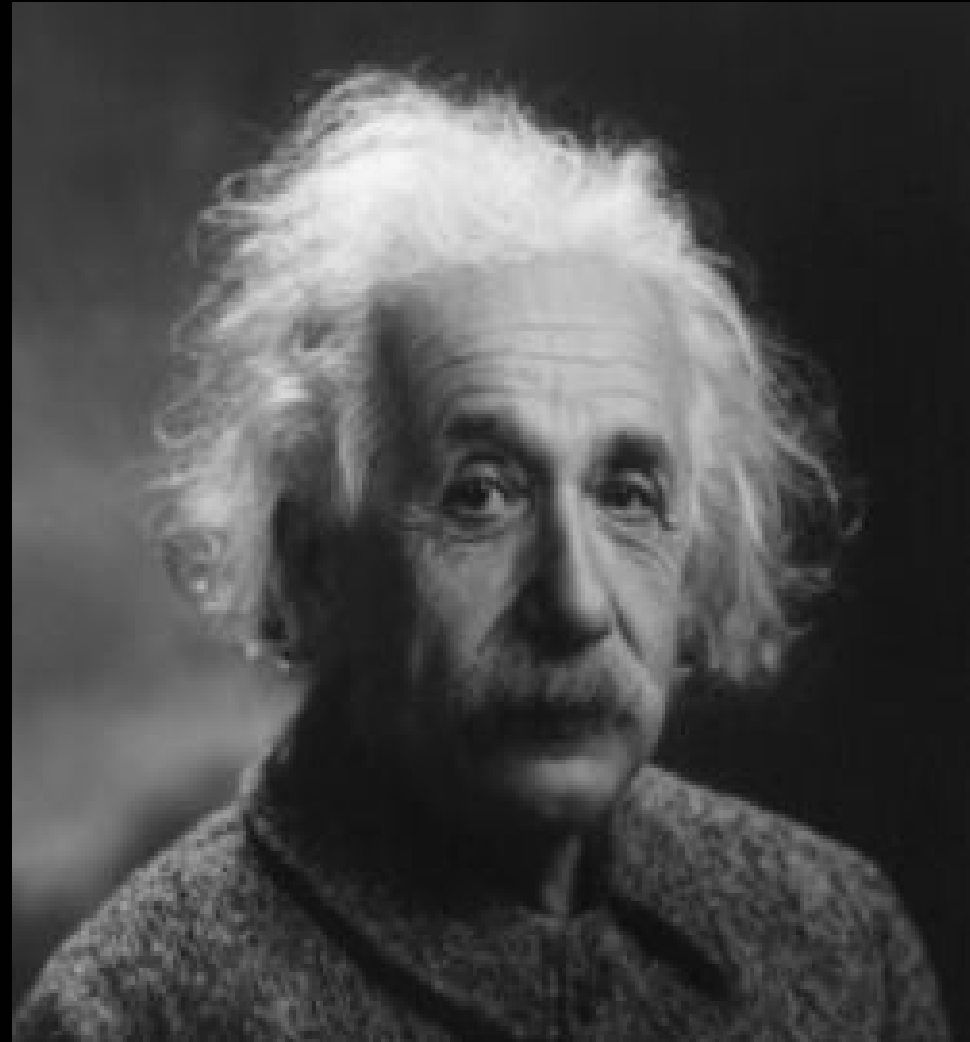
Part II:

The Fate of the Enlightenment
Project

The Actual Fate of “Enlightenment Project” as a *Global* Phenomenon in the Period 1800 – present



- “All of our exalted technological progress, civilization for that matter, is comparable to an axe in the hand of a pathological criminal.”
- Albert Einstein, Letter to Zangger (1917)



Part III:

The Crisis in the Enlightenment Project – and the Distribution of Responsibilities



‘[Your] words were a great comfort to me, for similar thoughts are going through my mind as well, in view of the evil which our once so beautiful science has brought upon the world.’

‘One must then also decide to keep one’s knowledge to oneself, ... for otherwise others are still going to misuse the results for evil purposes, and I feel that one would then never be free of responsibility.’

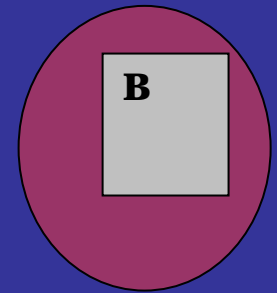
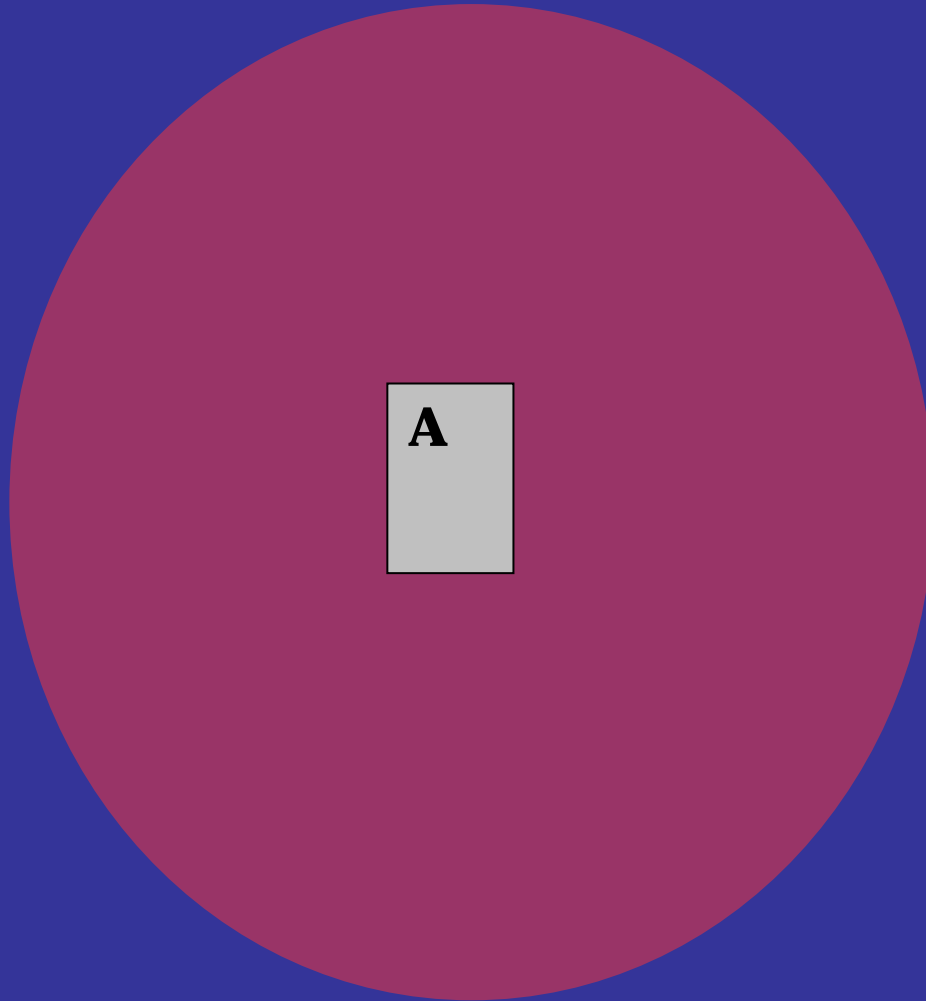
Max Born, letters to Einstein (1954/5)

Do senior scientists – including leaders such as Nobel Prize-winners – have an ethical and social duty to consider (along with the rest of us) their collective responsibility for the consequences of their research?

“Now you have the demonstration that everyone was waiting for. Whether this approach will be applicable to making babies, I don't know. And I hope I never find out.”

Dr. Jose B. Cibelli, Michigan State University, commenting on the news that South Korean scientists had announced the cloning of human embryos and extraction of embryonic stem cells

The Actual Fate of “Enlightenment Project” as a *Global* Phenomenon in the Period 1800 – present



Two possibilities:

Society's legal, policy, and regulatory mechanisms manage adequately the consequences, on an ongoing basis, of new scientific knowledge;

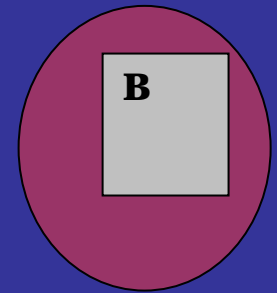
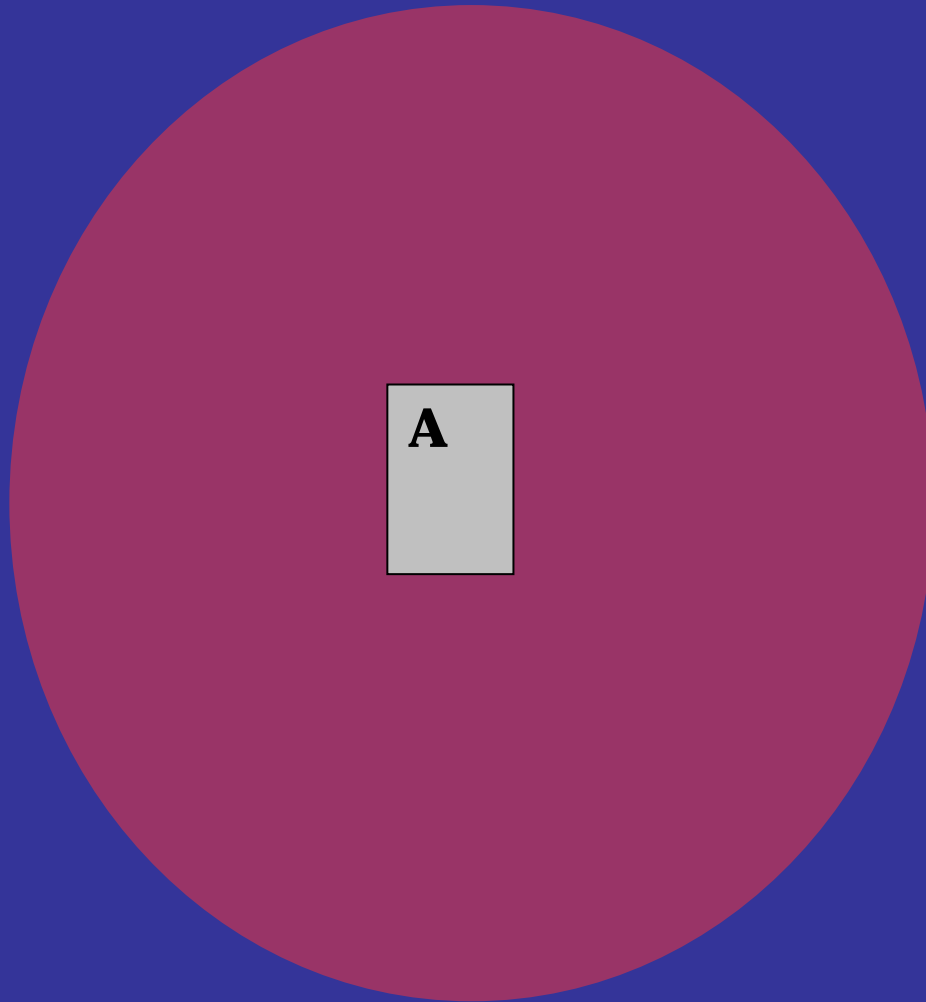
AND?

Senior scientists participate directly and regularly in public forums where social, ethical, and policy issues related to scientific research are debated.



Part IV:
What are our Options?
An Exercise

The Actual Fate of “Enlightenment Project” as a *Global* Phenomenon in the Period 1800 – present



Diagnosis

1. The imbalance of “A” and “B” is a real and vitally important phenomenon.
2. This imbalance represents a serious risk (potential danger) for the future of humanity.

Two “Optimistic” Scenarios

1. Nothing is done and gradually the problem takes care of itself.
2. Deliberate action is taken to redress the imbalance, it succeeds, and gradually “B” is strengthened around the world.

Two “Pessimistic” Scenarios

1. The imbalance contributes to a general collapse of modern society – which takes science along with it.
2. There is a general collapse of modern society but the legacy of modern science is preserved for the future.

A Little “Bayesian” Exercise

1. Using the handout sheets, assign your own “subjective probability” to each of the four scenarios (A1, A2, B1, B2): How likely (probable) is it that each forecast will come true?
2. Your assignment of likelihood does not have to add up to 100% across the whole set (the scenarios are not necessarily mutually exclusive).

A Little “Bayesian” Exercise

- You may add one or more of your own scenarios and discard a similar number of the ones presented.

A Little “Bayesian” Exercise

- Use the following categories:
 - 1) Almost certain (90-100%)
 - 2) Quite likely (70-90%)
 - 3) More likely than not (50-70%)
 - 4) Even (50%)
 - 5) Possible (30-50%)
 - 6) Not very likely (10-30%)
 - 7) Almost impossible to imagine (0-10%)

Part V:
A Reading:
Excerpt from
Hera, or Empathy

Hera

OR EMPATHY



A WORK OF UTOPIAN FICTION BY
WILLIAM LEISS

- Forthcoming 2008:
- The Priesthood of Science (Book Two of The Herasaga)