

Philosophy and Science.
Philosophers, Loyola, April 6, 1951.

1. For a variety of reasons mathematicians and scientists of the XXth century ~~are~~ differ radically from their predecessors in their attitude towards philosophy.

Old attitude: principle of exclusion.

New attitude

Science is not enough: inimical gov't (Nazi, Russia)
social problems (human sciences have not kept pace)

A-bomb: know-how is not enough; also know-whether.

Even theoretically science is not enough:

biologists' need to break through mechanist concepts

mathematicians' need to settle basic issues: Whitehead Russell; Hilbert

physicists' need to discover what he is dealing w; relat, quantum mech

Long-term trend; now well established; still are survivals
of mid-Victorian mentality, more common in the backwaters of thought

2. Fact invites a philosophic investigation, understanding
b corresponding adaptation of philosophic attitude.

Background: E A Burtt, Metaphysical Foundations of Modern Science
Prof. Chicago before Hutchins, Kegan Paul 1925

3. Modern scientific movement begins from Renaissance: Poland,
Germany, Italy.

Anti-Aristotelian in physics; Neo-Pythagorean in philosophy.

a Right: principle of relevance: add only insight to data

b Wrong: notion of objectivity presupposed by distinction
between primary and secondary qualities.

a Relevance: not final, efficient, instrumental, or material
cause; but formal cause.

distinction between heuristic-descriptive and
explanatory conjugate.

Galileo, Kepler, Newton.

b Notion of objectivity: mechanical model

Philosophers riding band-wagon: Descartes, Hobbes, Cambridge
Platonists, Berkeley, Hume, Kant.

Newton's principia: two concepts of true motion.

c Relativity: true motion is as defined by abstract theory of
mechanics.

Quantum: not particles but physical system, observable, state.

4. What is real? Being. What you know when you make a true
judgment.

What is object? Being, divides from within.