

Before 1500, the worldview was organic. People lived in small, cohesive communities and experienced nature in terms of personal relationships, interdependence of spiritual and material concerns and the subordination of individual needs to the community. In European civilizations, the scientific framework rested on two authorities Aristotle and the Church.

In the 13th century Thomas Aquinas combined Aristotle's comprehensive system of nature with Christian theology and ethics, establishing the framework that remained unquestioned throughout the middle ages. Knowledge was static. Schools transmitted static knowledge.

But even that early, there was a force that broke through

John Wycliffe was a charismatic young (17) Latin scholar in the early 14th century who believed everyone should have the right to read the Bible in English. Oxford's Merton College, Lollards

1382 the Church figured out this wasn't a good idea

1412 28 years after his death the Archbishop of Canterbury declared

1428 his bones were dug up and burned on a little bridge over the River Swift, a tributary of the Avon River.

The Avon to the Severn runs; The Severn to the sea; and Wycliffe's dust shall spread abroad;
Wide as the waters be.

p. 80 Box 4.1

Shift of perspective from the parts to the whole

Inherent multidisciplinary

From objects to relationships

From measuring to mapping

From quantities to qualities

From structures to processes

From objective to epistemic science

Heisenberg "What we observe is not nature itself, but nature exposed to our method of questioning." The method of questioning becomes an integral part of scientific theory

From Cartesian certainty to approximate knowledge

In the 1940s, once the basic systems concepts had been clarified, some systems thinkers began to formulate actual systems theories

System, systems level, organization, complexity, emergent properties, etc.