

Ars Morphologica

A History of Model-Based Reasoning and the Art of Discovery from Plato to Zwicky

Tom Ritchey

Chapter 2

Plato's Architectonic and the Foundational Model of Rational Science

SYNOPSIS

(1) Presenting the foundational principles of rational science based on Plato's hierarchy of epistemological states; (2) Deconstructing this epistemological hierarchy reveals the basis for the fallacious nature of such dichotomies in the history of science as materialism vs. idealism, pluralism vs. monism and empiricism vs. rationalism; (3) How the complementary nature of *ars inveniendi* (the art of discovery) and *ars demonstrandi* (art of demonstration) has been employed within the Neoplatonic tradition in science; (4) How morphology, both as a scientific research program and as a general modelling method, relates to these principles.