On the Three Types of Science

The *special sciences* are inductive studies of facts involving criticism of statements that are partially restrictive and existential.

Mathematics is a deductive study of conceivable states of affairs involving criticism of statements that are completely nonrestrictive but also nonexistential.

Metaphysics is a deductive study of the most abstract principles of facts involving criticism of statements that are existential but also completely nonrestrictive.

Presuppositions and implications:

(1) Statements are to be distinguished as either (a) partially restrictive; (b) completely restrictive; or (c) completely nonrestrictive.

(2) A *completely restrictive statement* (e.g., "Nothing exists.") denies that any ontic possibility whatever is actualized.

(3) A *partially restrictive statement*, if affirmative (e.g., "There is a deer in the garden."), implicitly denies that some ontic possibility is actualized (i.e., "Everything in the garden is other than a deer."), while a partially restrictive statement, if negative (e.g., "There is no deer in the garden."), implicitly affirms that some ontic possibility is actualized" (i.e., "Everything in the garden is other than a deer.").

(4) A *completely nonrestrictive statement* (e.g., "Something exists.") does not deny that any ontic possibility whatever is actualized.

(5) Completely nonrestrictive statements are necessarily true—the nonexistential ones of mathematics, negatively or hypothetically true, the existential ones of metaphysics, positively or categorically true. Completely restrictive statements, by the same token, are necessarily false. On the other hand, partially restrictive statements are true or false only contingently.

(6) Statements are also to be distinguished as either (a) *existential*; or (b) *nonexistential*, according to whether they do or do not assert existence in the primary sense of actual or concrete existence. (Thus the partially restrictive statements criticized

by the special sciences are existential, as are the completely nonrestrictive statements criticized by metaphysics, while the completely nonrestrictive statements criticized by mathematics are nonexistential.)

(7) Possibilities are to be distinguished as either (merely) *ontological* or (also) *ontic*—this distinction roughly corresponding to the familiar distinction between (merely) "logical" and (also) "real" possibilities. (The first distinction is to be preferred because, on the view that logical (*de dictu*) and real (*de re*) modality are convertible or coextensive, any possibility whatever is both logical and real.) An ontological possibility is any possibility that, logically, is coherently conceivable and, ontologically, not incompatible with the strictly necessary conditions of the possibility of concrete reality as such, while an ontic possibility is, in addition, more or less probable given the contingent conditions of reality as of a given time and place

20 July 2008